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Research Report 1862

**Assessing Army Professional Forums – Metrics for
Effectiveness and Impact**

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October 2006

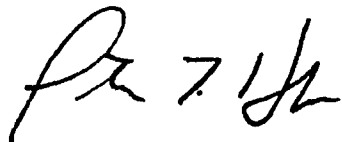
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ASSESSING ARMY PROFESSIONAL FORUMS – METRICS FOR EFFECTIVENESS AND IMPACT

EXECUTIVE SUMMARY

Research Requirement:

As the rate of change in the operational environment outpaces the development of doctrine and schoolhouse instruction, leaders must direct their own development in order to adaptively and professionally meet the challenges brought on by Army transformation. Army professional forums (APFs), powered by advances in collaborative toolsets and multimedia presentation software, provide a means for leader self-development and professional growth.

The Army senior leadership recognizes the importance of agility and professionalism in its leaders and is supporting four active APFs with nearly twenty more in development as part of the broader Army knowledge-management initiative. The ability to assess the functioning and impact of an APF on individual, unit, and organizational performance is key to ensuring that APFs provide return on investment to the Army and meet the developmental needs of their members. Yet, tools and methods for assessing the functioning and impact of APFs remain largely unexplored. The purpose of the present research was to conduct an initial exploration of this area.

Procedure:

In this research, we proposed a general framework for evaluating APFs. The framework posits a causal chain linking the structure and characteristics of the APF ultimately to enhanced Army effectiveness through activity in the APF, changes in individual member capability, and improvements in unit effectiveness. We used the framework to assess *S3-XO.net*, an APF geared towards battalion and brigade operations officers (S3s) and executive officers (XOs).

Findings:

The proposed APF assessment framework is an efficient means for determining whether APF structure and characteristics and APF activity are adequate for achieving impact. In addition, the framework provides a starting point for evaluating individual-, unit-, and organization-level impact through linking activity in the forum to key challenges jointly faced by APF members and the organization.

When the framework was used to assess *S3-XO.net*, we found that although the APF has a sound technological foundation it currently lacks the member activity necessary to achieve significant impact. Generating a higher level of activity in the forum requires the establishment of a core group of active participants combined with more active facilitation of conversation. A deeper understanding of the needs of the forum's target audience would also aid in effective facilitation and generation of activity.

Utilization and Dissemination of Findings:

The early stages of an initiative present the most valuable opportunity to establish checks that ensure the initiative is functioning effectively and meeting organizational goals. Establishing such checks enhances the organizational impact of the initiative. The APF assessment framework developed in the present research enables the assessment of APFs during the early stages of the Army knowledge-management initiative. The framework also serves a cost-effective prerequisite to comprehensive individual, unit, and organizational effectiveness assessment as the initiative reaches more advanced stages.

EVALUATING ARMY PROFESSIONAL FORUMS – METRICS FOR EFFECTIVENESS AND IMPACT

CONTENTS

	Page
INTRODUCTION	1
KNOWLEDGE SHARING, THE ARMY LEADER, AND ORGANIZATIONAL EXCELLENCE.....	2
The APF – Serving the Passionate Professional.....	2
Turning Passion Into Impact.....	3
Demonstrating Impact to High-Level Decision Makers.....	4
A Proposed Causal Framework Linking APF Activity to Organizational Effectiveness.....	4
APF Structure and Characteristics.....	4
Social and Intellectual Capital.....	5
Leader Competence and Professionalism.....	6
Organizational Effectiveness – Unit.....	6
Organizational Effectiveness – The Army.....	6
ASSESSING APF STRUCTURE AND CHARACTERISTICS	7
Structure and Characteristics Necessary for Facilitating APF Activity.....	7
The Plan.....	7
Personnel	9
Functional Requirements.....	10
Technical Requirements	12
Structure and Characteristics – A Proposed Framework for Assessment.....	12
ASSESSING SOCIAL AND INTELLECTUAL CAPITAL	16
Social and Intellectual Capital Present in a Healthy Professional Forum	16
Connections	17
Context	18
Content	18
Conversation.....	20
Social and Intellectual Capital – A Proposed Framework for Assessment	21
ASSESSING LEADER COMPETENCE AND PROFESSIONALISM.....	26
ASSESSING ORGANIZATIONAL EFFECTIVENESS – UNIT.....	27
ASSESSING ORGANIZATIONAL EFFECTIVENESS – THE ARMY.....	27
ILLUSTRATION – APPLYING THE METRICS TO EVALUATING <i>S3-XO.NET</i>	28
CONCLUDING REMARKS.....	28
REFERENCES	31
APPENDIX A – LIST OF INTERVIEWEES.....	37
APPENDIX B – ASSESSMENT OF <i>S3-XO.NET</i>	39
APPENDIX C – CONDUCTING ASSESSMENT OF THE ARMY PROFESSIONAL FORUM	101
APPENDIX D – FORUM MEMBER SURVEY	107
APPENDIX E – ACRONYMS	111

CONTENTS (continued)

LIST OF TABLES

	Page
Table 1. Assessment Framework for the APF Plan	14
Table 2. Assessment Framework for APF Personnel	15
Table 3. Assessment Framework for Functional Requirements	16
Table 4. Assessment Framework for Connections	22
Table 5. Assessment Framework for Context.....	23
Table 6. Assessment Framework for Content.....	24
Table 7. Assessment Framework for Conversation	25
Table 8. <i>S3-XO.net</i> Plan Status	41
Table 9. <i>S3-XO.net</i> Personnel Status	44
Table 10. <i>S3-XO.net</i> Functional Requirements Status.....	46
Table 11. <i>S3-XO.net</i> Connection Characteristics Status.....	53
Table 12. Conversation Posts by <i>S3-XO.net</i> Member Role.....	55
Table 13. Knowledge Posts by <i>S3-XO.net</i> Member Role.....	56
Table 14. <i>S3-XO.net</i> Context Characteristics Status.....	58
Table 15. <i>S3-XO.net</i> Content Characteristics Status.....	59
Table 16. Knowledge Post Locations	60
Table 17. Founding Officer Contributions to Knowledge Posts.....	62
Table 18. <i>S3-XO.net</i> – Conversation Characteristics Status.....	64
Table 19. Type of Initiating Posts for One-Post and Multi-Post Discussion Threads.....	66
Table 20. A Proposed Framework for Assessing Potential Impact on Officer Values, Personal Characteristics, and Professionalism (Be)	82
Table 21. A Proposed Framework for Assessing Potential Impact on Officer Tactical, Technical, Conceptual, and Interpersonal Competence (Know)	83
Table 22. A Proposed Framework for Assessing Potential Impact on Officer Influencing, Operating, and Improving Competence (Do)	84
Table 23. A Proposed Framework for Assessing Potential Impact on Unit Effectiveness.....	92
Table 24. A Proposed Framework for Assessing Potential Impact on Army Effectiveness	93

LIST OF FIGURES

	Page
Figure 1. Proposed Framework for Linking APF Activity to Organizational Effectiveness	5
Figure 2. <i>S3-XO.net</i> Main Page	40

INTRODUCTION

It would be a profound understatement to claim that Army leaders must be agile in order to meet the demands of the current operational environment. At a time when the Army's organizational structure is undergoing the most significant change since the 1960's (Smith, 2005), leaders must command a wider range of missions than ever before, often within the domain of a highly adaptive, asymmetric threat. Moreover, the increased involvement of U.S. forces in full-spectrum operations is changing the fundamental role of the Army from warfighting to more broadly supporting the political ends of the federal government through peacekeeping, stabilization, counterinsurgency, and conventional warfighting, among others. As the rate of change in the operational environment outpaces the development of doctrine and schoolhouse instruction, leaders must direct their own development in order to adaptively and professionally meet the challenges brought on by Army transformation.

Army Professional forums (APFs), powered by advances in collaborative toolsets and multimedia presentation software, provide a means for leader self-development and professional growth. As members of an APF, geographically distributed leaders can directly share practical solutions, generate new ideas, and exchange lessons learned from operational experiences faster than the institutional knowledge-dissemination process currently allows (Baum, 2005). Through discussion and the development of social networks, APFs also enable the growth of a sense of professional community and mutual obligation among their members, many of whom may never meet face-to-face. The Army senior leadership recognizes the importance of agility and professionalism in its leaders and currently supports four active APFs with nearly twenty more in development as part of the broader Army knowledge-management initiative comprised of the Battle Command Knowledge System (BCKS) and the Army Knowledge Online (AKO) portal. The ability to assess the functioning and impact of an APF on individual, unit, and organizational performance is key to ensuring that APFs provide return on investment to the Army and meet the developmental needs of their members. Until the present research was conducted, however, this topic was unexplored.

The purpose of the present research was to conduct an initial effort addressing this gap in understanding of the effectiveness and impact of APFs. This report documents the assessment framework we designed for evaluating the functioning and impact of APFs and the results we achieved when applying our assessment framework to an established APF called *S3-XO.net*. However, our goal was to establish impact-assessment metrics applicable across APFs. This report therefore provides guidance for applying the metrics to APFs other than *S3-XO.net*. In addition, we summarize the future research directions necessary to ensure the generalizability of the proposed metrics and to understand the impact of knowledge sharing on the Army more generally.

KNOWLEDGE SHARING, THE ARMY LEADER, AND ORGANIZATIONAL EXCELLENCE

The APF – Serving the Passionate Professional

Knowledge-sharing programs have been adopted by several commercial organizations whose leadership has recognized the importance of employee agility and initiative to competitive advantage and organizational success. Serving as the foundation for best practice in knowledge management is the community of practice (CoP; Crager & Lemons, 2003). Wenger, McDermott, and Snyder (2002) define CoPs as: “groups of people that share a concern, a set of problems, or a passion about a topic and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (p. 4). Online CoPs provide a virtual roundtable where people with similar concerns can exchange knowledge and work together toward innovative practical solutions (Bobrow & Whalen, 2002). Online CoPs have generated significant return on investment through increased productivity and decreased redundancy in commercial organizations that have supported their development and implemented them effectively (Crager & Lemons, 2003).

The APF represents an extension of the online CoP because it goes beyond building practical solutions to building the profession itself (Woodie, 2005). APFs differ subtly from online CoPs. Whereas APFs share the design principles of online CoPs, the primary purpose of APFs is to support professional conversation among forum members through moderated and facilitated discussion. APF members do not share only a single common problem or class of problems (e.g., maintenance troubleshooting; Bobrow & Whalen, 2002) as CoP members do. Often, multiple CoPs are situated inside a single APF. Also, membership in these forums--unlike in CoPs--consists of present, future and past practitioners spanning organizational boundaries.

Through voluntary participation, APF members provide a positive solution-oriented voice within the Army profession. APFs such as *companycommand.mil* (*CC.mil*) and *NCOTeam.org* reflect the passion for the profession and the devotion to learning and personal growth typical of U.S. Army leaders. Consider the following quotes from members of these APFs:

“I was on this site whenever I logged onto a computer in Iraq. ... I'm definitely a stronger and more well rounded NCO [noncommissioned officer] because of *NCOTeam.org*. ... When I did have a pretty big personal/professional issue, I addressed my concerns to my peers on this site and received nothing but support and guidance. ... An Army of One really doesn't mean an Army of individuals; we truly are one team here.”

– Staff Sergeant JL, Iraq

“I look forward to ... see what great information you all are going to put out. I can't wait to share it with the other platoon leaders and the Company XO [executive officer].”

– Paul

“I really appreciate this web-site, and the newsletter. I arrived in Iraq in April and have done a lot of growing up. *CC[.mil]* was a great help through some tough experiences. Thanks.” – Captain K, from IZ

"This resource has been, and continues to be, an invaluable tool for professionals to interact and benefit from the collective knowledge of others in our profession of arms... This forum is simply a tool that every NCO, from infancy to seasoned veteran, can be assured that they are following in the footsteps of excellence..."

– 1st Sergeant JMD, Assistant Commandant, U.S. Army NCO Academy

CC.mil and *NCOTeam.org* have been heralded far and wide in the media, featured in best practice reports (Snyder & Briggs, 2003), books (Dixon, Allen, Burgess, Kilner, & Schweitzer, 2005), news articles [Baum, 2005; 13th Corps Support Command, 2003], and even discussed on the radio (National Public Radio, January 25, 2005). They are widely recognized for the strong interpersonal bonding and active knowledge sharing among their members. Long-standing and well-established APFs such as these represent the gold standard when evaluating the effectiveness of efforts to cultivate and sustain APF activity.

Turning Passion Into Impact

Although it may seem common sense that active APFs have an impact on organizational performance, an understanding of how APF activity generates organizational effectiveness is still in its infancy. Put another way, it remains to be explained how passionate activity in an APF results in individual, interpersonal, team, community, and unit growth and how this growth ultimately promotes organizational excellence. Such an understanding is necessary to demonstrate organizational impact, and is required to assure high-level decision makers that money invested in staffing and running APFs is money not better invested in other leader-development endeavors. In addition, understanding the process by which APFs generate organizational excellence helps knowledge-management administrators and designers determine how best to facilitate the effectiveness of APFs by addressing weaknesses and enhancing strengths. Understanding the impact process requires that a causal framework be developed to link activity in an APF ultimately to organizational excellence (Crager & Lemons, 2003; Lesser & Storck, 2001; Snyder & Briggs, 2003). Case studies from commercial organizations provide the outline of such a causal framework and provide the first evidence that efforts to support problem-focused knowledge sharing (i.e., in CoPs) can have a tremendous return on investment (e.g., Crager & Lemons, 2003).

Developing a causal framework for understanding Army effectiveness is an exceedingly difficult task for multiple reasons. First, Army effectiveness is not easily quantified (i.e., it is not reflected in units of production or revenue dollars) or even conceptualized (e.g., the Army is successful both when it wins conflicts and when it prevents conflicts through stabilization and reconstruction). Second, when attempting to determine the impact of a particular APF, there is the problem that nearly every aspect of Army effectiveness is determined by the collective activity of members of that APF and other individuals. In business, by contrast, members of a CoP are more likely to be focused on a circumscribed problem set and to represent a department that makes a discrete contribution to productivity (e.g., repair service, see Bobrow & Whalen, 2002). Therefore, the impact of knowledge sharing on departmental effectiveness can be more easily identified and departmental impact on overall organizational performance can be estimated. Third, through BCKS and AKO, leaders have a very broad range of resources available to them for knowledge acquisition and sharing. The adaptive cross-membership of individual leaders in multiple communities makes isolating the impact of a particular APF on

organizational effectiveness difficult. Finally, adaptive cross-membership in multiple communities (including those available on secure Internet connections and those on insecure government and public connections) has implications for where leaders will go to meet their needs given that they have limited time to spend. Understanding how activity in an APF affects unit and organizational effectiveness therefore requires understanding how the environment in which leaders are operating (e.g., wartime vs. peacetime, known vs. unknown enemy, and so on) influences the needs of forum members and the ability to meet these needs in the forum.

Demonstrating Impact to High-Level Decision Makers

The difficulty of developing a causal framework does not mean that an attempt should not be made to understand how APF activity affects organizational performance. If the present analysis stopped at simply describing APF activity (though this is an important aspect of determining impact), then the purpose of our research would not be fulfilled. High-level decision makers would not have the information they require, and a bridge would not be built between APF enthusiasts and those who must make strategic decisions about how to allocate limited resources. Moreover, valuable information that could be used to enhance the effectiveness of current APFs or guide the development of future APFs would not be gathered. What the challenge in both developing a meaningful causal framework and demonstrating impact means is that impact must be clearly understood within the context of the APF of interest and its members. There is useful guidance for developing such an understanding in best-practice reports such as Crager and Lemons (2003) and Lesser and Storck (2001). The key is to align metrics of APF activity with organizational objectives and mission using as a shared reference point the tasks the APF members must perform to do their jobs effectively. A rational analysis of this alignment is a widely recognized critical first step not only in evaluating the impact of knowledge management [see, e.g., Hanley, 2003; Crager & Lemons, 2003; Lesser & Storck, 2001; Department of the U.S. Navy, 2001] but also for designing strategies that result in the successful creation, sustainment, and growth of a knowledge forum itself (Snyder & Briggs, 2003).

A Proposed Causal Framework Linking APF Activity to Organizational Effectiveness

Figure 1 shows our proposed causal framework for linking APF activity to organizational effectiveness. Each component of the framework is explained in the following five sections. The assessment criteria and metrics following the presentation of the framework were determined through a combination of literature review and user and stakeholder interviews (see Appendix A).

APF Structure and Characteristics

The structure and characteristics of the APF serve as the foundation of our proposed causal framework. Structure and characteristics represent the features of the APF that support knowledge retrieval and the development of social connections that lead to discussion and the development of new knowledge. These features are the determinants of APF activity and impact. APF structure and characteristics may include interface design features/usability (e.g., organization of knowledge) and community features (e.g., member bios), as well as the administrative backbone of the APF, including the composition of the core support team, the

organizational support for the APF, and the alignment of the APF goals with the organizational mission, among other considerations.



Figure 1. Proposed Framework for Linking APF Activity to Organizational Effectiveness

Social and Intellectual Capital

Enabled by APF structure and characteristics is the development of social and intellectual capital. If the APF is designed and administered effectively, members will be able to retrieve actionable (i.e., relevant and timely) knowledge from the community. Effective APF design and facilitation will also enable members to participate actively in developing a network of individuals with whom to discuss novel problems and collaboratively generate new knowledge. Discussion and the development of social capital are key characteristics of APFs that differentiate them from knowledge repositories or portals (Kendall & McHale, 2003; Schweitzer, 2003). Forum members actively develop social and intellectual capital for there to be a demonstrable impact of the APF on individual, unit, and organizational performance.

Leader Competence and Professionalism

The development of social and intellectual capital leads to improved leader competence and sense of professionalism. Specifically, the acquisition and development of actionable knowledge enhances individual technical, tactical, and conceptual competence. Leaders are better equipped to handle such challenges as applying the military decision making process (MDMP) or leveraging technology, for example, because they have been exposed to the effective methods their peers have used to develop planning standard operating procedures or to work with emerging digital systems.

Professional self-identity also develops through active knowledge sharing and development because it is through this activity that the leader actively participates in gaining a concrete sense of his role in his current duty position and the associated tasks, duties, and responsibilities he must perform. Participating in the APF also fosters the skills and attitudes necessary for continuous professional self-development.

Discussion with peers promotes a sense of professional community, a sense that one belongs to a group of people who share similar duties and responsibilities, who play a similar role in the larger organization, who face similar problems and challenges, and to whom one is responsible for being respectful and helpful.

Interpersonal competency is enhanced through storytelling in which leaders share how they handled novel and sensitive interpersonal issues. Leadership effectiveness also is enhanced through storytelling in which leaders share how they handled authentic leadership issues. It is through this storytelling that the tacit knowledge critical to leadership effectiveness is acquired (Cianciolo, Antonakis, & Sternberg, 2004).

Organizational Effectiveness - Unit

Organizational effectiveness at the unit level is a result of the development of leader competence and professionalism. The expert and mature leader is more technically competent, as well as a more effective role model and team player, which is critical in supporting the day-to-day operations, morale, professionalism, and combat effectiveness of the unit.

Organizational Effectiveness – The Army

Organizational effectiveness at the Army level results in large part from the enhanced functioning of its tactical warfighting units. In short, these units must see first, understand first, act first, and finish decisively in full-spectrum operations. The organizational effectiveness of the Army also is enhanced by achieving better results with fewer resources and retaining more high-quality personnel. This result is achieved, in part, through increased professional self-development on the part of Army personnel and increased satisfaction with Army life.

Each of these sections of the causal framework, together with implications for metrics and their associated measures will be discussed in detail in the following sections.

ASSESSING APF STRUCTURE AND CHARACTERISTICS

As described previously, an APF's structure and characteristics determine the level of activity in the APF and the impact it can be expected to have on performance. If the APF does not have a solid foundation, the forum will not be active and cannot be expected to generate impact. Similarly, if an APF is found to be inactive and incapable of generating impact, the root of the problem may be revealed by evaluating the effectiveness of the APF's structure and characteristics. In order to determine the effectiveness of APF structure and characteristics, the following three broad aspects of the APF foundation should be assessed in detail: (1) the plan on which the development of the forum is based; (2) the personnel structure that supports forum growth and activity; and (3) the degree to which the forum meets the general functional requirements for online knowledge sharing and community building. An explanation of each of these aspects of APF structure and characteristics is presented below, followed by proposed metrics for assessing these aspects.

Structure and Characteristics Necessary for Facilitating APF Activity

The Plan

Several sources converge on the importance of starting the APF development process with an initial plan for the forum (e.g., BCKS, 2005; Dixon et al., 2005; Gerber, 2003; Glennie & Hickok, 2003; DON, 2001; Wenger et al., 2002). The plan ensures that the design of the forum is aligned with member needs, which stimulates activity, and with the mission and goals of the parent organization, which translates activity into impact. The key features of the plan include:

- ✓ A **statement of the purpose** of the forum
- ✓ The **envisioned impact** of the forum and the criteria to be used to assess this impact
- ✓ A **description of the target audience**, including the needs of this audience
- ✓ A **statement of the cultural norms, core values, or conventions** to be honored
- ✓ A **specification of the roles and responsibilities** of the supporting personnel
- ✓ A **functional and technical specification** of the online meeting space

According to Dixon et al. (2005), defining a forum's purpose provides a framework for the administrative team to use in determining the scope of their efforts -- to determine membership criteria, the nature of content and its organization, and the functional requirements of the forum. The forum type, or general purpose, may be (a) helping, where the purpose is to provide a place where members help each other solve practical problems; (b) best practice, where the purpose is to develop and disseminate best practice information; (c) knowledge stewarding, where the purpose is to develop tools, insights, and approaches needed by forum members in the field; or (d) innovating, where the purpose is to develop highly innovative solutions and ideas (Wenger et al., 2002). Wenger et al. recommend that a forum be focused on one of these general purposes in order to avoid overwhelming forum members. In addition, the forum's general purpose should be determined by the overall strategic intent of developing the forum in the first place.

The envisioned impact of the forum directly ties the forum's purpose to achieving the parent organization's mission and goals. The statement of envisioned impact should specify how, if the forum evolves according to its purpose, it will influence the attitudes and behavior of its members in a way that benefits the organization (e.g., fosters organizational commitment, shortens learning time, etc., see Lesser & Storck, 2001). This specification should result in specific, concrete criteria to be used for later evaluating the impact of the forum.

Description of the target audience and its needs is critical. Wenger et al. (2002) recommend that the scope of the target audience be wide enough to encompass new people and ideas, but not so wide that members frequently are not interested in the content posted or find it difficult to retrieve the information they seek (see also Gerber, 2003; Stuckey & Smith, 2004). Ultimately, the target audience should include people who know and people who need to know (Dixon et al., 2005). An important aspect of analyzing the needs of the target audience is determining how essential the planned forum is to meeting these needs (BCKS, 2005). It should be determined that the needs of the target audience (a) can actually be met by the planned forum; and (b) cannot be better met by some other means. In addition, once the target audience's needs are identified, those needs that are particularly important to the organization and those needs about which forum members are especially passionate should be selected for initial focus in the forum.

The plan should include a statement of the cultural norms, core values, or conventions to be honored because such a statement sets the tone for the forum. Setting the correct tone for the forum will build members' trust that knowledge shared or generated in the forum will benefit their development and that participating in the forum will not have negative implications for their career. Such trust is critical to the health of the forum (Gerber, 2003). Moreover, trust in the forum, built through shared values, will help keep members engaged in the forum (Prevou & Burgess, 2003).

Another key component of the plan is the specification of the roles and responsibilities of the supporting personnel. Numerous sources converge on the following general categories of supporting personnel: leader, core group, facilitators, and technical support (Dixon et al., 2005; DON, 2001; Snyder & Briggs, 2003; Wenger et al., 2002). The plan should designate the specific tasks assigned to each category of personnel, who will perform these tasks, and how much time personnel are expected to spend on these tasks relative to other job duties. The communication channels between categories of personnel should also be identified in order to facilitate timely and effective communication.

The final component of the forum plan is the functional and technical specification of the online meeting space. This specification should include a description of what activities the online meeting space will support (e.g., discussion, solution sharing, social networking, etc.), the interface features or functionalities the online meeting space must have to support these activities (search capability, conversation posting and archiving, etc.), and the hardware/software and security requirements necessary to successfully implement the online meeting space. Because the same software platform (Tomoye Simplify) will be used to support all APFs, this component of the forum plan is of greater importance for identifying future functional and technological

requirements for APFs as a whole than for identifying the same requirements for an individual forum.

Personnel

As described above, there are four general categories of personnel required to initiate and sustain a healthy APF. These categories and their requirements for serving the healthy APF are described in more detail below.¹

The leader, or community coordinator, of the forum serves the critical leadership functions of providing an overall vision for the forum and helping supporting personnel to achieve this vision through a well developed professional network and his/her role within the formal organization (Wenger et al., 2002). The leader must be knowledgeable about the domain (i.e., the general topic area of interest to forum members) addressed in the forum, though not necessarily a subject matter expert, and must have a passion for the professional development of the forum members (Wenger et al., 2002). Forum leaders must also take the initiative in fostering the forum's long-term health even in the absence of subject matter expertise (Wenger et al., 2002). Most importantly, the leader must be supported and willing to commit between 20 and 50 percent of his/her time to leading the forum. A common pitfall in forum leadership is to spend more time cultivating activity in the online space of the forum (a role of the core group and facilitators, see below) than cultivating offline enthusiasm for the forum through active marketing and networking with community members (Wenger et al., 2002).

The core group is the foundation of the APF. Building a core group is among the critical first steps in establishing an active community because it is through this group of highly active members that the forum establishes its identity and sets the conditions for sustained growth (Dixon et al., 2005; Wenger et al., 2002). The core group should comprise knowledgeable and experienced members of the forum target audience because they must use their subject matter expertise to make judgments about the importance and relevance of knowledge in the forum, and to analyze and synthesize the knowledge (Dixon et al., 2005; Department of the U.S. Navy, 2001). In addition, the members of the core group must have a strong, wide social network in order to have thorough visibility on the needs and interests of the target audience, to connect members of the target audience to willing experts who can help, to garner support for the forum in its initial stages of growth, and to be an advocate for the forum during institutionalization (Dixon et al., 2005). Moreover, because the core group is the heart of forum facilitation, its members should have subject matter expertise in online professional forums (both the technical and behavioral aspects) or at least facilitating collaborative activity online. Finally, and perhaps most importantly, the core group must have a passion for developing the profession, particularly as it relates to the professional growth of the forum's target audience. This passion is critical to attracting new members to the site, as well as expert contributors and financial supporters, and to maintaining the level of involvement necessary to sustain the forum (Stuckey & Smith, 2004).

¹ It should be noted that with the possible exception of forum leaders, individuals' duties may fall under multiple categories such that, for example, a member of the core group also facilitates conversation or a facilitator provides technical support. It is more important that the functions of the four personnel categories be served, than that each category is comprised of different individuals.

Because professional forums do not maintain themselves, the activity of the facilitators is absolutely critical to the health of the forum (Stuckey & Smith, 2004). Facilitators play the key roles of setting the tone in the forum and responding to member needs for knowledge and discussion in particular topic areas. To set the tone, facilitators must monitor discussion threads to keep conversation moving in a productive direction and to ensure that the core values of the forum are being honored. Facilitators respond to member needs in a variety of ways, including (a) seeking out and organizing relevant knowledge that can be posted in the forum for easy viewing, retrieval and discussion; (b) identifying subject matter experts who can contribute to the discussion of particular topics; and (c) linking members with questions to members with answers (Gerber, 2003; Stuckey & Smith, 2004).

In the initial stage of forum development, the leader and core group work together to identify and send out personal invitations to representatives of the target audience ("pointmen") to participate in the forum and spread the word that the forum is up and running (Dixon et al., 2005). These individuals also identify "command contacts," subject matter experts who are willing to support the professional development of the forum members (Dixon et al., 2005). Facilitators also participate in identifying and contacting pointmen and command contacts, especially as the forum begins to grow. The leader, core group, and facilitators must form a cohesive, mutually supportive, and passionate team through open communication, camaraderie, and desire to grow the profession (Dixon et al., 2005).

The technical support staff translates functional requirements into technical requirements and interface design features. The technical support staff is therefore responsible for designing and implementing the collaborative environment, to include software, hardware, Internet, and security requirements. Moreover, technical support staff members must maintain the collaborative environment, ensuring that (a) knowledge and individuals within the forum are easy to locate; (b) interface features (e.g., hotlinks, forms) work as intended; (c) additional features needed by forum members or support personnel (e.g., content rating forms, survey forms, synchronous chat) are implemented; (d) database functions (e.g., address book, activity metrics, knowledge search) work properly; and (e) facilitators and other support personnel are trained to use the software. Technical support staff members should be experts in both knowledge management and information technology.

Functional Requirements

Functional requirements are those requirements the online meeting space must meet in order to provide an environment suitable for an online community. Fundamentally, this collaborative environment must support APF members' ability to share and discuss content and to develop social connections (Nahapiet & Ghoshal, 1998; Stuckey & Smith, 2004). The online meeting space must therefore provide a place where APF members can engage in discussion, especially asynchronous discussion (see Schweitzer, 2003), about the topics that interest them. Members must be able to locate content of interest and identify other members with whom it will be beneficial to discuss that content. Because the typical APF user is likely to be limited in his free time, he must be able to locate content and other members extremely quickly (i.e., "three clicks" or less), else he will find some other means to meet his needs or simply not meet them at all.

The first step in meeting these functional requirements is that the APF itself be easy to locate and easy to join. This requires that prospective members either be able to locate the APF through BCKS, AKO, The Center for Army Lessons Learned (CALL), Google, installation homepages, or some other readily available means or that they have heard of the APF through its members, the APF leadership and/or core group, instructors in the schoolhouse, commanding officers, mentors, or other colleagues (e.g., observer/controllers at the combat training centers). Prospective members must be able to join the forum with minimal effort (e.g., application forms are simple to fill out) and there must be a very short time lag between applying for membership and being granted membership (Prevou & Burgess, 2003). Importantly, potential APF members must feel that membership restrictions are logical and fair given the mission of the forum, else they will feel overly managed from the top down and buy-in to the forum will be diminished. Members should also be personally welcomed to the forum when they join in order to set the tone that the community is there for them and recognizes the importance of their membership (Prevou & Burgess, 2003). Additional welcoming gestures that may set the tone and foster a sense of community include a frequently asked questions list, a hands-free tutorial of the online meeting space, an APF mission statement and history, and other background information (Prevou & Burgess, 2003). In addition, a statement of the core values and conventions may be useful, as well as an area for user comments that fosters a sense of belonging to the online community.

A critical functionality of the online meeting space is the support of vibrant conversation among forum members. It is this functionality that distinguishes the discussion forum from a knowledge repository, a distinction that determines the generation of new knowledge and the growth of the community. Asynchronous discussion is the backbone of successful discussion forums, with synchronous discussion less frequently found (Schweitzer, 2003). The online meeting space must therefore enable the storage and meaningful organization of conversation threads and allow forum members to easily view conversations and post their own contributions. Features of the online meeting space should also help members evaluate the value of a conversation through indicating (a) the general topic of the conversation; (b) the number of posts involved in the conversation; (c) the date of the initial and most recent conversation posts; (d) the contributors of each post in the conversation; and (e) member ratings of the value of the conversation. It must be remembered, however, that vibrant conversation ultimately springs from a dedicated core group and facilitators who focus, protect, and foster the conversation (see above section, also Dixon et al., 2005; Stuckey & Smith, 2004), no matter how easy to use the discussion functionality of the online meeting space is.

Once in the online meeting space, quickly locating and retrieving content (including discussion threads) requires that it be organized into topic and sub-topic areas of greatest relevance to forum members, and that the most important and recent topics be placed prominently on the very front page of the forum (Dixon et al., 2005). In addition, there must be a robust search capability that supports searching the entire forum or selected communities in the forum as well as searching for content using a variety of user inputs (e.g., title, author, key words, content type, and so on). Awareness of content on the site can also be accomplished through "featured content" and "recent discussions" areas within each topic, "flags" indicating which topic and sub-topic has new content, direct links to content outside the forum, links between related content inside the forum, and regular newsletters featuring additions to the

forum. Members should be able to identify and indicate which topics are the most popular and which contributions are the most useful (e.g. through metrics to indicate number of posts to a particular topic and by using rating functions).

Finding people is as important to the health of the APF as finding content. Forum members must be able to identify other members, their background, and how to contact them. Member bios must include information that will help members to determine whether a particular person should be targeted for discussion or to establish the credibility of a person who has posted content. This information should include branch, current duty position, assignment history, combat experience, and personal areas of expertise, among others. Each member bio should include a list of how many posts the individual has made with links to each of these posts. As with content, there should be a robust search capability for locating people. The expertise of particular forum members may be highlighted through a “featured people” area or a regular newsletter. To facilitate a sense of community, an area indicating who is currently logged in to the forum is claimed to be beneficial (Dixon et al., 2005). Such a feature allows members to characterize the type of members who typically visit the forum. In an APF that supports synchronous chat, such a feature allows members to determine whether there is an expert currently online with whom a chat might be advantageous.

Technical Requirements

The speed, accessibility, and security of the network in which the online meeting space is situated are clearly important considerations for the leadership and administrative support of the professional forum to consider. The cost, flexibility, and organizational fit of the software used to generate the online meeting space are additional important factors. Decisions about networking and software that take these factors into consideration serve organizational needs (e.g., cost savings, political posturing, and information security) as much or more than the needs of the forum members, and for this reason are considered beyond the scope of the present analysis.

Structure and Characteristics – A Proposed Framework for Assessment

To assess APF structure and characteristics, a red-amber-green rating system can be used in order to translate qualitative information into “analytic” metrics (i.e., metrics that will allow rough comparisons between aspects of structure and characteristics within or across APFs). This system, which allows a combined red/amber and amber/green rating, is essentially an alternative format to a five-point rating scale. The red-amber-green system is preferable to a numerical rating scale so that (a) status ratings will communicate the predicted impact of the rated element on the health of the forum; and (b) the use of numbers does not mislead the reader to think that the rating system has quantitative properties (e.g., an interval or ratio scale) that it does not. The assignment of a status rating to any element is a subjective decision, based on an understanding of best practice in knowledge sharing, and ratings can, at best, be thought to fall on an ordinal scale. The assessment framework presented in this section features the structure and characteristics elements for which status should be assessed, and a description of the rating criteria (“red,” “amber,” and “green”) for each of these elements. Overall Status can be

determined by taking the average of the component status ratings featured in each table if the red-amber-green scale were treated like its analog, the 1-5 ordinal rating scale.

Table 1. Assessment Framework for the APF Plan

Plan Component	Status		
	Red	Amber	Green
Statement of Purpose	No statement of purpose provided.	Statement of purpose is abstract. It is not clear who the forum is intended to serve or what functionality the forum must have to serve its members.	Statement of purpose indicates the target audience to be reached and the overall function the forum is to serve for the target audience, including specification of the forum type. It should have clear implications for membership criteria, the nature of content and its organization, and the functional requirements of the forum.
Envisioned Impact	No envisioned impact provided.	Envisioned impact is abstract, indicating broad level goals without specification of how these goals relate to the intended membership of the forum.	Envisioned impact includes a specification of what organizational goals will be affected by forum activity, how that impact will be achieved through attitude and behavior change, and what the criteria for assessing that impact will be.
Description of Target Audience	No description of target audience.	Target audience is vaguely defined – its particular needs are unclear and the link between meeting these needs and meeting organizational goals is unclear.	Target audience is clearly defined, its particular needs are identified, its needs of particular interest to the parent organization are highlighted, and the other means by which these needs may be met are identified/ruled out.
Statement of Cultural Norms, Core Values, or Conventions	No statement of cultural norms, core values, or conventions.	These factors are stated, but no means for identifying or enforcing them is specified.	These factors are clearly stated, criteria for assessing whether they are being honored are identified, and a means for enforcing them is specified.
Specification of Roles and Responsibilities	No specification of roles and responsibilities.	Roles and responsibilities identified, but not described.	It is clear who is responsible for what role in the forum, how much of their time is required to fulfill this responsibility, and the tasks/duties required to fulfill this responsibility.
Functional and Technical Specification	No functional and technical specification	Functional and technical requirements are general or abstract.	The functional and technical requirements of the online meeting space are outlined in detail, including security requirements.

Table 2. Assessment Framework for APF Personnel

Personnel Category	Status		
	Red	Amber	Green
Leadership	APF has no formally designated leaders or formally designated leaders do not recognize themselves as leaders.	Leadership recognizes itself as such but devotes only limited time to the forum (less than 15% of their time). Time devoted to the forum is engaged in the online space of the forum, rather than fostering the forum's long-term growth behind the scenes.	Leadership is providing overall vision, is passionate about the professional development of the APF members, is knowledgeable about the domain addressed by the APF, is supported by his/her higher-ups, is committing between 20-50% of his/her time to the forum, and spends time networking for the forum behind the scenes.
Core Group	APF has no core group or core group members are passionate and active, but are not representative of the target audience of the forum. The core group lacks social networks and subject matter expertise necessary to foster growth.	Core group members are knowledgeable and experienced members of the target audience, have subject matter expertise in the domain addressed by the APF, have a strong, wide social network, and have a passion for developing the profession, but do not actively recruit members, expert contributors, and other supporters to the forum, and are not actively involved in maintaining the forum.	Core group members are knowledgeable and experienced members of the target audience, have subject matter expertise in both knowledge management and the domain addressed by the APF, have a strong, wide social network, have a passion for developing the profession, actively recruit members, expert contributors, and other supporters to the forum, and are actively involved in maintaining the forum. The core group consists of at least one full-time member.
Facilitators	APF has no facilitators or facilitators rarely perform facilitation duties (less than 25% of their time).	Facilitators spend 25-40% of their time on facilitation activities, lack social connections to facilitate activity, or do not spend their time in the forum performing facilitation activities.	Facilitators actively monitor discussion threads, seek out, post, and organize knowledge in the forum, identify subject matter experts to contribute to the forum, and link forum members with problems to members with solutions.
Technical Support	APF has no formal technical support staff or support staff rarely performs technical support duties.	Technical support staff is not knowledgeable about fostering online communication or must spend time devoted to the forum performing maintenance instead of constructive activities.	Technical support staff is knowledgeable about both knowledge management and information technology, perform frequent usability and quality assurance analyses, develop new features necessary to the site, monitor database health and functionality, and train the support staff to use the technology.

Table 3. Assessment Framework for Functional Requirements

Functional Requirement Category	Status		
	Red	Amber	Green
Locating the Forum	Leadership is inactive in spreading the word about the forum and forum is otherwise not accessible by external search	Forum is accessible via external search if searcher already knows what to look for and leadership is moderately active in advertising APF	Direct links to the APF are present in BCKS, AKO, or in Google search results and leadership actively spreads the word about the forum by visiting units, contacting combat training center observer/controllers, or using existing social networks.
Joining the Forum	The joining process takes 48+ hours, has no membership restrictions, and 50%(-) user reflections on joining the forum are positive	The joining process takes 24-48 hours, some membership restriction is enforced, 50-80% of user reflections are positive	The joining process can be completed in 24(-) hours and membership restrictions are in line with the intended target audience. 80% + of user reflections are positive.
Tone in the Forum	Fewer than half of the tone features required for "Green" status are present in the forum or tone features present set the wrong tone (e.g., that the APF is designed to meet the needs of someone other than the members)	Forum features more than half of the tone features required for "Green" status and the features present set the correct tone	APF features a welcome letter for new members, a statement of the forum mission/purpose and core values/conventions on the main page or directly accessible through the main page, and a frequently asked questions section--and 2 of the following three features--a user comments area, an area for press releases or other information, and a brief tutorial or introduction to the online meeting space.
Conversation Support	Forum asynchronous chat capability is difficult to use and conversation thread features required for "Green" status are not present or reliable	Forum asynchronous chat capability is generally easy to use and conversation threads have a subset of the features required for "Green" status	Forum asynchronous chat capability is easy to use and each conversation thread features a relevant, descriptive title, a summary of the number of posts comprising the conversation, dates/times/authors of each discussion post, and member ratings of the value of the conversation.
Locating Content	Fewer than half of the locating content features required for "Green" status are present or locating content features present are unreliable/don't work. Fewer than 50% of user reflections are positive.	Forum features more than half of the locating content features required for "Green" status and features are generally reliable. 50-80% of user reflections are positive.	The online meeting space provides all of the following features--a knowledge search capability that supports searching on multiple criteria (e.g., key words, author, content type, etc.), frequent (weekly) updating of recent content additions, flags or other indication of recently added content (including discussions), hit counts or other indication of popular/useful content (including discussions), direct links to Army knowledge repositories, libraries, or other external content, links between content inside the forum, a newsletter featuring forum highlights, and content analysis and synthesis. 80% + of user reflections on the retrieval and organization of content are positive.
Locating People	Fewer than half of the locating people features required for "Green" status are present or locating people features present are unreliable/don't work.	Forum features more than half of the locating people features required for "Green" status and features are generally reliable.	The online meeting space provides all of the following features--a forum membership directory, a person search capability, and member bios that include (a) name; (b) contact information (email and phone); (c) branch; (d) current duty position and station; (e) assignment history; (f) combat experience; (g) topic areas of expertise; and (h) a listing of posts made by the individual with associated links--and two of the following three features--a list of who's currently logged in to the forum, a "featured people" area in the forum, a "featured people" area in the forum newsletter.

ASSESSING SOCIAL AND INTELLECTUAL CAPITAL

Social and Intellectual Capital Present in a Healthy Professional Forum

Social capital, as defined by Nahapiet & Ghoshal (1998), is comprised of the physical connections among people, the shared language and perspective among these people, and the social-psychological relations that these people share with one another. This definition of social capital roughly corresponds to Dixon et al.'s (2005) construct of "connections" among the members of an APF, but also recognizes the role of shared context, trust, and mutual obligations among forum members in facilitating interpersonal growth and the development of intellectual capital. Intellectual capital comprises the knowledge that is exchanged and constructed among the members of an APF. This definition of intellectual capital corresponds roughly to Dixon et al.'s (2005) construct of "content." A further description of each aspect of social and intellectual capital is provided below.

Connections

Connections are the overall structure of who is reached and how (Nahapiet & Ghoshal, 1998). Dixon et al (2005) point out that in an APF, those who need to know must be connected to those who know. These individuals comprise the target membership of the community, whose scope must be carefully defined in order to keep member interaction relevant and engaging (Gerber, 2003; Stuckey & Smith, 2004). Similarly, a balance of people who know and who need to know among the forum's actual members is important for facilitating productive discussion. The connections between individuals assembled in this way support the exchange and integration of knowledge necessary for the development of intellectual and social capital to occur (Nahapiet & Ghoshal, 1998).

Connections among members of an APF may take the form of discussion threads inside the forum or emails, phone calls, or face-to-face conversations outside the forum. Dixon et al. (2005) describe the important role that APF facilitators play in helping forum members establish these connections. When individuals post a question in the forum, facilitators should respond immediately to the post, indicating to the individual that their question has been acknowledged. Facilitators then use their own connections or contact members of the forum to identify the best person to answer the question in a timely fashion. The swiftness with which networks can be established via the forum is a function, therefore, of the depth and breadth of the facilitators' social networks and how easily the background and expertise of forum members can be determined. Sufficient background information provided in member bios also allows forum members to be proactive in seeking connections with experts. Because responding thoughtfully to questions about the profession takes time and effort, the experts contacted to make a contribution must be motivated to serve the individual who contacted them, the forum of which the individual is a member, or the professional community more broadly. The degree to which forum members fill out their member bios may reflect one's self-perception as a contributor to the community or willingness to be identified as an expert. For example, very high ranking officers who wish to learn from the community may not fill out biographical information out of concern that their recognized presence in the forum may stifle conversation and activity.

Motivation to participate in knowledge exchange requires (a) trust that the exchange will not lead to undesirable professional consequences (Gerber, 2003); (b) expectation that the exchange will be conducted in a professional manner according to shared values; (c) a sense of obligation to serving the community present in the forum; and (d) personal identification as a member of the forum (Nahapiet & Ghoshal, 1998). For this reason, the APF must not only facilitate connections between people on the basis of the knowledge they can impart but also on the basis of shared norms, values, and expectations. The norms and values established by tone of the forum and maintained through monitoring and facilitation help to develop a stable, giving relationship between members and the community.

Context

Nahapiet & Ghoshal (1998) identified two aspects of shared context: shared narratives and shared codes and language. These theorists argue that shared context facilitates the development of intellectual capital by (a) providing cognitive access to individuals with knowledge to share; (b) fostering the expectation that knowledge exchange will be useful; and (c) enabling the conceptual overlap that makes knowledge exchange possible. Shared context may be facilitated through restrictions on membership in the APF and/or it may grow out of activity in the forum.

Dixon et al. (2005) claim that a sense of shared context, particularly shared narratives, among APF members can be fostered through participation in shared experiences enabled by the forum. These shared experiences can take several forms, such as collaborative book reviews, synchronous group discussions online or face-to-face, regular membership seminars or meetings, or collaborative exercises online. Importantly, participation itself in the forum also creates shared experience. Forum activity must foster a sense of cohesion among members, a sense of ease with intellectual and social exchange, in order for relationships to develop and continued knowledge sharing to occur. Cohesion fostered in the APF could play an important role in facilitating integration among its members outside the forum, for example if their duty position calls them to work together (Sanders, 2002).

Content

Intellectual capital can take four forms (Spender, 1996): conscious, automatic, objectified, and collective. Conscious knowledge is an individual's explicit knowledge, exemplified by his or her tools or explicit procedures used to solve practical problems. In the context of an APF, such tools or procedures may include policy letter templates, orders formats, unit SOPs, and training management matrices, among other baseline products (Kilner, 2002, also Bobrow & Whalen, 2002, and Gerber, 2003). A person's conscious knowledge at times may be difficult to distinguish from his or her automatic, or tacit knowledge (Spender, 1996). Automatic knowledge often takes the form of stories--stories of success or failure from which the discerning learner can extract the link between particular situational contexts and the appropriate actions to take in these contexts (Cianciolo et al., 2004; Spender, 1996). Stories may provide important illustrative context for effectively applying another person's conscious knowledge.

Objectified knowledge is an organization's explicit knowledge, which, in the case of the Army, would include doctrine, lessons learned, tactics, techniques, and procedures, and administrative procedures, among others. Objectified knowledge has been validated according to institutional standards (Spender, 1996) and serves multiple functions, such as providing a frame of reference for decision making and taking action, providing a means for holding individuals accountable for their behavior in the organization, and providing a foundation on which further knowledge is built. Collective knowledge is an organization's tacit knowledge, implicit rules--socially generated and socially observed--for the behavior of organization members. Collective knowledge shapes individuals' understanding of organizational expectations for their behavior, expectations that may or may not be made explicit in objectified knowledge. In the case of the Army, collective knowledge may include shared understanding of what behaviors reflect Army values, how individuals in particular positions should interact with one another, and what actions are likely to lead to success within the organization.

Spender (1996) claimed that sharing explicit (i.e., conscious and objectified) knowledge is akin to a library or database access and that only the development of tacit (i.e., automatic and collective) knowledge reflects true learning. This point is arguable, depending on whether the perception of new affordances enabled by explicit knowledge is considered a form of learning (Gibson & Pick, 2000) or whether accomplishing new understanding is considered necessary for applying new explicit knowledge. In any case, the APF must support the exchange and application of explicit knowledge as well as the sharing and generation of tacit knowledge, as both are critical determinants of performance.

The question of what knowledge should be present in an APF and how to judge its quality may not be quite so difficult as it seems initially. Simply put, the applicability of knowledge indicates its value. Spender (1996) strongly resisted the "objectification" of knowledge, noting that knowledge must be interpreted in terms of its utility in supporting purposeful action. Importantly, objectification and assessment of forum content on the basis of a criterion other than relevance may create the perception that external interests are driving the forum. The interviews conducted as part of this project universally acknowledge that APFs driven by the top of the organization, and not by the members of the APFs themselves, will fail. Driving the APF from the top not only may erode the trust of the forum members but also may steer the content and conversation away from their needs (Gerber, 2003). Assessment of APF content will result in inadvertent driving from the top if assessment criteria are based on the needs of those at the higher levels of the organization, rather than the members of the community.

Dixon et al. (2005) also emphasized the importance of relevance when evaluating the quality of knowledge. Emphasis on relevance implies that trained professionals are, to varying degrees, experts in their own right, capable of making sound judgments regarding the quality of knowledge. The amount of range restriction in intellectual ability that is repeatedly shown in professional populations supports the assumption that most Army officers will exhibit relatively sound judgment about when to apply knowledge acquired in an APF. Setting the tone in the APF for a professional exchange serves as a partial barrier to making ineffectual and/or inappropriate posts (including posts that do not meet information assurance requirements). Community policing by both facilitators and forum members aids in the rapid removal of inappropriate posts.

Along these same lines, a second implication is that abstract criteria are insufficient for judging the quality of knowledge. Rather, the quality of knowledge is reflected in the degree to which it is aligned with the needs of the forum member seeking it. Knowledge will be maximally relevant, and thus of highest quality, if it is developed by the target members of the forum, rather than by other interested parties². To the degree that the information needs of forum members are aligned with key determinants of organizational effectiveness, knowledge sharing and development will have a powerful impact on the organization.

Dixon et al. (2005) pointed out that the relevance of knowledge is determined in part by the degree to which it can be directly applied as opposed to modified before application. Although this criterion is clearly sensible, nearly all knowledge shared or developed in an APF will require some degree of intelligent translation for application to a specific context. Forum members who make contributions should provide contextual information that will aid in the interpretation of their posts. In addition, facilitators should be actively engaged in ensuring that context is provided, for example through establishing connections among posts such that the same knowledge discussed in multiple contexts can be revealed and understood. Such connections and synthesis expedite knowledge sharing and generation.

A final, additional aspect of relevance is timeliness (Dixon et al., 2005). Content in the forum must be continually updated in response to the needs of its members, with new additions made readily apparent. To some extent, the active forum serves as its own engine, although facilitators play a critical role in keeping discussion active by sustaining social connections in the forum, maintaining meaningful boundaries around the community, and continually drawing useful information from the environment (Stuckey & Smith, 2004). Facilitators help ensure that questions posted are answered as quickly as possible and that stale content is moved from the active forum to an archive.

Conversation

Conversations are the means by which a sense of trust and community develop and by which new knowledge is generated (Dixon et al., 2005). Therefore, the APF is one means by which social and intellectual capital co-evolve (Nahapiet & Goshal, 1998). Initial intellectual capital fosters the development of social capital, as conversation around sharing knowledge builds trust and a sense of community. Without conversation, an APF would simply be a searchable database of information. It is therefore critical that conversation be part of an APF in order for it to be considered a community and a source for the development of new knowledge. Conversation may serve different purposes in the forum, including clarification or concretization of an abstract concept, exploration or brainstorming of new ideas, challenge or debate about existing ideas, or validation of or agreement on existing ideas. The sharing of tacit knowledge is another important purpose of conversation in the APF often achieved through storytelling.

As discussed previously with regard to content, conversations must be timely, applicable, and professional in order to be useful, and they must meet information assurance requirements.

² However, facilitators do play an important role in establishing the social connections that lead to the sharing and development of relevant knowledge.

They must be on-topic and develop at a pace that suits the needs of the person who started the conversation. Importantly, conversations must concretize abstract ideas by providing context that will aid in the application of the knowledge they contain. Discussion threads should build meaningfully on one another, resulting in synthesized ideas or lessons learned. Ideally, discussion threads are driven by the target members of the community themselves so as to prevent "discussion stray," which reduces the utility of the conversation for the forum members (Major Tony Burgess, personal communication). Because conversations are a shared experience among forum members, they must build trust and a sense of community through adherence to the values of the forum and the standards of professionalism. Conversations that build trust are respectful and constructive and do not digress into strings of complaints or personal attacks. Conversations that lead to mutual understanding and knowledge generation build a sense of trust that participating in the community will be helpful and boost motivation to actively participate.

Informal, face-to-face communities have long provided opportunities to generate knowledge through discussion. These groups are more limited in their size and reach than the APF because members must come from a relatively small geographical area. Use of phone and email increases the scope of these groups, but not to the extent made possible by the online forum. However, building an online meeting space is no more the same as building a healthy forum than outfitting a classroom is the same as conducting an effective class. Activity in the APF is as much a function of having the right place to gather as it is having the right topics to discuss and the right people with whom to have conversations. Review of the structure of APF content and membership provides insight into how active that forum can expect to be. Analysis of the quality of APF member interaction and of the products of this interaction provides insight into how much of an impact that forum can be expected to have.

Social and Intellectual Capital – A Proposed Framework for Assessment

As with evaluating APF structure and characteristics, a red-amber-green rating system can be used in order to translate qualitative information about social and intellectual capital into "analytic" metrics. The assessment framework presented in this section features the social and intellectual capital elements for which status should be assessed, and a description of the rating criteria ("red," "amber," and "green") for each of these elements. Overall Status can be determined by taking the average of the component status ratings featured in each table if the red-amber-green scale were treated like its analogue, a 1-5 ordinal rating scale.

Table 4. Assessment Framework for Connections

Connection Characteristics	Status		
	Red	Amber	Green
Membership Composition	APF members represent less than 20% of the target audience, and fewer than 50% of APF members are from the target audience	APF members represent 20-50% of the target audience, and 50-85% of APF members are from the target audience	APF members represent 51% or more of the target audience, and the large majority of APF members (85%+) are from the target audience
Participating Members	Less than 50% of all posts is contributed by target members	50-85% of all posts is contributed by target members	85%+ of all posts is contributed by target members
Identifying Experts	Less than 50% of APF members provide their biographical information, particularly areas of expertise and assignment history and when less than 50% of member ratings of the ability to find experts in the forum are high	50-80% of APF members provide their biographical information, particularly areas of expertise and assignment history and when 50-80% of member ratings of the ability to find experts in the forum are high	80%+ of APF members provide their biographical information, particularly areas of expertise and assignment history and when 80%+ of member ratings of the ability to find experts in the forum are high
Facilitation of Connections	APF core group and facilitators report having a connection to an expert in 50%(-) of the content topics in the forum, and when 50%(-) of members report that their initial posts were immediately followed up by some form of acknowledgement by a facilitator or core group member	APF core group and facilitators report having a connection to an expert in 50-90% of the content topics in the forum, and when 50-90% of members report that their initial posts were immediately followed up by some form of acknowledgement by a facilitator or core group member	APF core group and facilitators report having a connection to an expert in 90%+ of the content topics in the forum, and when 90%+ members report that their initial posts were immediately followed up by some form of acknowledgement by a facilitator or core group member
Connection Quality	Less than 50% of member ratings of the speed and thoroughness with which their questions were addressed are high, when less than 50% of member ratings of the staying power of the connections developed via the forum are high, and when less than 50% of member ratings of the utility of the connections developed via the forum are high	50-80% of member ratings of the speed and thoroughness with which their questions were addressed are high, when 50-80% of member ratings of the staying power of the connections developed via the forum are high, and when 50-80% of member ratings of the utility of the connections developed via the forum are high	80%+ of member ratings of the speed and thoroughness with which their questions were addressed are high, when 80%+ of member ratings of the staying power of the connections developed via the forum are high, and when 80%+ of member ratings of the utility of the connections developed via the forum are high

Table 5. Assessment Framework for Context

Context Characteristics	Status		
	Red	Amber	Green
Shared Narratives	There are no "built" opportunities to participate in shared experiences via the forum (e.g., book reviews, collaborative exercises, etc.), and members' reported feelings of having shared experience in the forum are weak	There are "built" opportunities to participate in shared experience via the forum, but members do make use of these opportunities and members' reported feelings of having shared experience via the forum are moderate	There are "built" opportunities to participate in shared experiences via the forum, members make use of opportunities, and members' reported feelings of having shared experience via the forum are strong
Shared Codes and Language	Less than 50% of forum members' reported confidence in their understanding of the content of the postings is high	50-80% of forum members' reported confidence in their understanding of the content of the postings is high	80%+ of forum members' reported confidence in their understanding of the content of the postings is high

Table 6. Assessment Framework for Content

Content Characteristics	Status		
	Red	Amber	Green
Contributing Members	Less than 50% of knowledge objects are contributed by target members	50-90% of knowledge objects are contributed by target members	90%+ of knowledge objects are contributed by target members
Content Synthesis	Less than 50% of related posts have links to one another and summaries of fewer than 50% of conversations are provided	50-90% of related posts have links to one another and summaries of 50-85% of conversations are provided	90%+ related posts have links to one another and summaries of the majority of conversations (85%+) are provided
Content Organization	Less than 50% of forum members rate the organization of the content in the forum as easy to understand and in line with how they think about what they know/need to know	50-90% of forum members rate the organization of the content in the forum as easy to understand and in line with how they think about what they know/need to know	90%+ of forum members rate the organization of the content in the forum as easy to understand and in line with how they think about what they know/need to know
Content Activity	Less than 50% of content categories and subcategories feature new knowledge posts every 12 hours and fewer than 10% of the content postings are downloaded by fewer than 10% of the target members	50-90% of content categories and subcategories feature new knowledge posts every 12 hours and at 10-50% of the content postings are downloaded by 10-50% of the target members	90%+ of content categories and subcategories feature new knowledge posts every 12 hours and at least half of the content postings are downloaded by at least half of the target members
Content Quality	Knowledge posts are not contextualized, fewer than 50% of member ratings of the utility of the knowledge are high, and information assurance failures are not removed or remain for more than 24 hours.	Knowledge posts are minimally contextualized, 50-90% of member ratings of the utility of the knowledge are high, and there are no information assurance failures or information assurance failures are removed within 24 hours.	Knowledge posts are sufficiently contextualized to support their use, 90%+ of member ratings of the utility of the knowledge are high, and there are no information assurance failures or information assurance failures are removed within 8 hours.
Professional Links	The forum does not provide access to educational courses, leader development activities, and leader-team collaborative exercises/vignettes designed to fill professional knowledge gaps and help leaders move to higher levels within their organization	The forum provides limited access to educational courses, leader development activities, and leader-team collaborative exercises/vignettes designed to fill professional knowledge gaps and help leaders move to higher levels within their organization	The forum provides access to educational courses, leader development activities, and leader-team collaborative exercises/vignettes designed to fill professional knowledge gaps and help leaders move to higher levels within their organization

Table 7. Assessment Framework for Conversation

Conversation Characteristics	Status		
	Red	Amber	Green
Participating Members	Fewer than 50% of discussion posts are contributed by forum target members	50-85% of discussion posts are contributed by forum target members	The majority of discussion posts (85%+) are contributed by forum target members
Conversation Activity	Fewer than 50% of the initial posts in the forum are followed by a meaningful response (i.e., not simply an acknowledgement) within 24 hours and time lag between succeeding conversation posts is greater than 48 hours	50-90% of the initial posts in the forum are followed by a meaningful response (i.e., not simply an acknowledgement) within 24 hours and time lag between succeeding conversation posts is 24-48 hours	90% or more of the initial posts in the forum are followed by a meaningful response (i.e., not simply an acknowledgement) within 24 hours and time lag between succeeding conversation posts is shorter than 24 hours
Conversation Quality	Incidents of unprofessional commentary (e.g., complaining, backbiting, personal attacks, or failure to comply with information assurance requirements) are not removed or remain for more than 24 hours, fewer than 50% of succeeding discussion threads build meaningfully on the initial conversation post, and fewer than 50% of forum members report finding discussion threads useful	There are no incidents of unprofessional commentary or incidents of unprofessional commentary are removed within 24 hours, 50-90% of succeeding discussion threads build meaningfully on the initial conversation post, and 50-90% of forum members report finding discussion threads useful	There are no incidents of unprofessional commentary or incidents of unprofessional commentary are removed within 8 hours, 90% or more of succeeding discussion threads build meaningfully on the initial conversation post, and 90% or more forum members report finding discussion threads useful

ASSESSING LEADER COMPETENCE AND PROFESSIONALISM

Assessment of the impact of APF activity on individual leader competence and professionalism requires identifying the general-level competencies that give rise to effective performance in the jobs of the forum members. It also involves identifying how the Army defines professionalism as it relates to the target members of the forum. Army values and certain other personal characteristics specified in doctrine represent a significant component of what it means to be an Army professional and are applicable across APFs. The Army's overarching framework of "Be, Know, Do" (FM 22-100 – *Leadership*³) captures what it means to be an Army professional in terms of personal characteristics, competence, and action.

In order to manage the scope of the impact assessment, one should target those personal characteristics, competencies, and actions for which common or persistent problems have been identified in the target membership. These are the areas where one can expect to see improvement due to an intervention because performance is not already at ceiling. These are also the areas where performance improvement is most badly needed, so impact in these areas is most likely to be aligned with organizational objectives.

There are multiple ways to assess whether APF activity has had an impact on the personal characteristics, competencies, and actions selected. Ideally, one would develop and administer in a quasi-experimental setting valid, reliable special-purpose assessments to capture leader competence and professionalism both before and after becoming a member of an APF. Growth in these areas could be compared to the growth occurring in these same areas for APF non-members with otherwise similar characteristics (e.g., years in the Army, participation in institutional instruction, etc.).

Given that leaders do not typically become members of an APF *en masse*, and that the construction and validation of the required special-purpose measures would likely necessitate a nontrivial research effort of its own, the feasibility of the quasi-experimental approach is highly questionable. A reasonable proxy is to assess whether or not the content and discussion in the APF addresses the key problem areas in leader competence and professionalism identified in the initial analysis. Using the social and intellectual capital assessment criteria described in the previous section of this report, APF functional effectiveness in the key areas of interest could be assessed. For assessing aspects of community development and professionalism, it would be feasible to survey APF members and non-members, asking them to provide self-reports of community and professional identity. Comparing classroom performance data and/or officer evaluation report data between APF members and non-members may serve as a substitute for special-purpose measures and surveys, provided there is not significant range restriction in grades and evaluations. If comparisons between members and non-members are used, it is important to distinguish between more and less active members so that average levels of impact can be understood in terms of time spent in the forum.

³ FM 22-100 is currently under revision and will be reissued as FM 6-22. Many of the concepts and the underlying structure presented in FM 22-100 will carry forward to FM 6-22, so much of the framework described in this report will remain intact after the revised doctrine is issued.

ASSESSING ORGANIZATIONAL EFFECTIVENESS – UNIT

To identify targets for impact assessment at the unit level, “unit” must be defined in terms of the APF members. For example, if the APF is geared toward company commanders, the unit should be defined as a company with special emphasis on the interaction between the company commander and his or her platoon leaders. If the APF is geared towards staff executive officers, the unit should be defined as the staff. Defining “unit” in this way ensures that unit performance falls largely within the sphere of influence of the forum member rather than external factors, which is required for a fair assessment of impact.

As with assessing leader competence and professionalism, key problem areas in unit performance (once “unit” has been defined) should be identified in order to manage the scope of the impact evaluation. Similarly, evaluating organizational effectiveness at the unit level should also focus assessment on these key problem areas.

Assessment of unit effectiveness ideally involves observation of the unit performance of APF members and non-members. Unfortunately, as with assessing leader competence and professionalism, assessing unit performance would require the development and validation of unit performance measures, not to mention significant logistical and administrative challenges. A reasonable proxy would be to compare the unit performance of APF members and non-members as assessed by observer/controllers when the units rotate through combat training centers or as represented by operational data from units recently returned from deployment. As stated previously, if comparisons between members and non-members are used, it is important to distinguish between more and less active members so that average levels of impact can be understood in terms of time spent in the forum. An alternative proxy is to assess whether or not the content and discussion in the APF addresses the key problem areas in unit performance identified in the initial analysis. Here too, one could use the social and intellectual capital assessment criteria to assess the APF functional effectiveness in the key areas of interest.

ASSESSING ORGANIZATIONAL EFFECTIVENESS – THE ARMY

In one sense, identifying targets for impact assessment at the organizational level is simple; the Army seeks to reduce costs while at the same time improve capability. These broad goals may be accomplished, for example, by improving retention, a matter of critical importance to today’s Army, streamlining the transformation effort, and maintaining high levels of professionalism in a time of great flux in roles and responsibilities.

The difficulty in assessing impact at the organizational level lies in the fact that one APF can only reach a small fraction of the Army’s leaders. Moreover, it may take several years to see impact as junior members of an APF work toward positions of authority in the organization. It reasonably may be expected that multiple APFs are required to make a demonstrable difference at the organizational level in the broadest sense.

That said, it may be possible to capture the potential organizational impact of a single APF by identifying the implications of organizational initiatives, such as transformation, for the jobs of the APF members. Job demands placed on APF members by organizational initiatives should be addressed in the forum in order for the forum to have an impact on the performance of

the organization as a whole. In addition, knowledge sharing and discussion in the forum should support continual development in support of organizational goals, including increased sense of commitment to the organization and enhanced capability to make learning a lifelong endeavor.

ILLUSTRATION – APPLYING THE METRICS TO EVALUATING *S3-XO.NET*

In order to test the applicability and feasibility of our metrics and their associated measures (e.g., Tables 1 through 7), we used them to assess *S3-XO.net*, an APF geared towards battalion and brigade operations officers (S3s) and executive officers (XOs). Specifically, we assessed the strength of *S3-XO.net*'s structure and characteristics, the effectiveness of the social and intellectual capital developed in *S3-XO.net*, and the potential for individual, unit, and organizational impact of *S3-XO.net* content. The complete analysis is presented in Appendix B, with only the general findings summarized here.

The causal framework was applied successfully to evaluating *S3-XO.net* in a cost-effective and diagnostic manner. At the time of our analysis, we found that although current and future S3s and XOs were desirous of a means to connect and share knowledge with experts, member activity in *S3-XO.net* was occurring at lower levels than was expected given the age of the forum. Our investigation revealed that greater emphasis was devoted to the technical specification and maintenance of the forum, rather than to the means by which activity in the forum would be generated. Moreover, *S3-XO.net* lacked the personnel structure and support necessary to improve the functioning of the forum. For these reasons, metrics of leader competence and professionalism and organizational effectiveness were explored but the attempt was not made to measure them.

CONCLUDING REMARKS

The present research represents an initial effort to explore and develop a general framework for assessing the effectiveness and impact of APFs. We have based the framework on an overview of the scholarly and technical literature on knowledge sharing and its assessment. The framework and its application are also based on interviews with a range of people involved in APFs--from organizational thinkers to forum members to forum developers. The result of our initial work is a generalizable framework that can be used as a foundation for assessing the effectiveness and impact of APFs at both the beginning and advanced stages of their development. Appendix C provides some guidance as to when assessment should be conducted to maximize its utility.

Future research can take several directions to advance this effort. First, the validity of the APF assessment framework when applied to multiple APFs should be explored. The exploration should feature APFs in differing phases of development, from very early stages to advanced stages. Such an exploration would further illuminate the link between APF structure and characteristics and APF activity. Second, individual-, unit-, and organization-level impact should be analyzed using more active APFs, such as *CC.mil*. This analysis would illuminate the link between APF activity and impact, as well as identify appropriate means for directly assessing impact through special purpose measures (e.g., surveys, tactical games, etc.), observation of unit performance, and cohort tracking on organizational variables of interest (e.g., retention). Finally,

the validity of the red-amber-green assessment criteria should be examined closely by systematically investigating the link between different levels of activity in APFs and different levels of individual- and unit-level impact as directly assessed.

As a parting comment, we advise that careful attention be paid to ensuring that APF assessment reflects the delicate balance between the requirements of forum members to grow organically in an informal, consequence-free environment and the requirements of the organization to justify its investment in knowledge sharing to stakeholders. The consensus in the literature indicates that too much organizational involvement, perceived or otherwise, will reduce the trust of forum members and ultimately kill the informal knowledge sharing that provides organizational advantage (e.g., Gerber, 2003; Wenger & Snyder, 2000). However, knowledge-sharing forums depend on organizational cultivation to thrive and live up to their promise (Wenger & Snyder, 2000). Successful effectiveness and impact assessment therefore must serve to direct cultivation rather than impose requirements or change.

Consider the following analogy, extended from Wenger and Snyder (2000). A farmer one day discovers that wild onions are growing in one of his plots. He shares a couple of these onions with some close friends, and everyone agrees they are quite unique and flavorful. He believes that cultivating and selling the onions will give his farm a competitive advantage. However, the onions are easily pushed out by other plants and susceptible to dry spells. Motivated by the payoff he thinks cultivating the onions will provide, he invests time and money to clear a plot for them (reducing the plot size of some other vegetable) and to set up a rudimentary irrigation system. The onions thrive. The farmer is pleased, but he knows the real test of how wisely his resources were spent is whether the onions sell at the farmer's market. He uses his onion sales at the farmer's market as an assessment of his judgment. Naturally, the onion sales fluctuate as market demand changes. When sales are up, he continues his current cultivation practices. He uses quiet sales periods as evidence that he needs to change something in his cultivation practices. He changes techniques to help bring out the best the onions have to offer, such as sweet flavor one year and size another year. The onions thrive, the market responds, and the farmer is pleased.

In the present research, it was our intention to lay the groundwork for an assessment framework that directs APF cultivation. The application of our framework to assessing the effectiveness and impact of *S3-XO.net* demonstrates how assessment can lead to recommendations for better serving the needs of the forum members and, by extension, the needs of the Army. Future research must follow this lead such that APF assessment stimulates growth, rather than stifles it.

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APPENDIX A – LIST OF INTERVIEWEES

CC.mil Core Group Members (3)
NCOTeam.org Facilitators (2)
Instructor.net Developer (1)
S3-XO.net Founding Officers (3)
S3-XO.net Facilitator/Administrators (5)
NTC Observer/Controllers (8)
Future S3s/XOs (7)
Current or Past S3s/XOs (2)
Instructors (3)
Doctrine Writers (2)
Organizational Thinkers (5)

APPENDIX B - ASSESSMENT OF *S3-XO.NET*

In the present research, the metrics and assessment frameworks described in the main body of this report were applied to evaluating the Army Professional Forum (APF) *S3-XO.net*. This section presents the results of the assessment and recommendations for enhancing the forum's activity and potential impact.

A Brief History of *S3-XO.net*

S3-XO.net was designed to: "Create and foster knowledge and experience sharing among future, serving, and prior operations [officers] and executive officers [S3s and XO's, at the battalion and brigade level] in order to build combat ready units (*S3-XO.Net* In-Process Review #2, 29, as cited in Gerber, 2003)." *S3-XO.net* was developed during the winter and spring of 2003 by a group of Command and General Staff College (CGSC) students under the tutelage of Major Tony Burgess (member of the *CC.mil* core group) and Lieutenant Colonel Mike Prevou (CGSC professor), and with the support of the then head of the Combined Arms Center.

S3-XO.net was developed as part of an Army response to the success of *CC.mil*, an APF launched two years earlier (Gerber, 2003). The Battle Command Knowledge System (BCKS) is currently under development as the main component of this response. The purpose of BCKS is to harness knowledge sharing in the service of speeding up the combat decision cycle and of enhancing leader professional development. *S3-XO.net* is currently situated as one of several APFs under the umbrella of the Leader Network component of BCKS. Whereas other components of BCKS, such as Warrior Knowledge Base and Unit Network, are geared specifically to enhancing battle command, Leader Network is intended to have its primary impact on the development of professional competence.

The founding officers of *S3-XO.net* developed a plan for the forum, designed the online meeting space, and generated initial activity in the forum after it was launched. Within months of launching *S3-XO.net*, in May 2003, its founders, including Major Burgess, graduated from CGSC and were reassigned (Gerber, 2003). Activity in *S3-XO.net* therefore dropped significantly immediately after its launch as the founding officers moved on. Moreover, Lieutenant Colonel Prevou was deployed to Afghanistan for one year, so the leadership of the APF by necessity was handed off in August/September of 2003. Two majors at Fort Leavenworth assumed leadership of the forum at this time. In the spring of 2004, as activity on *S3-XO.net* was regaining momentum, *S3-XO.net* was shut down for approximately two months due to concerns about the security of the information discussed on the site. After placing login restrictions [i.e., use of Army Knowledge Online (AKO) username and password] and acquiring permission to restart, the *S3-XO.net* leadership brought the site back up in May, 2004. In December of 2004, due to difficulties re-establishing momentum⁴ on the now-secure site, the community was re-launched in an effort to get the word out that *S3-XO.net* was indeed back up and running.

⁴ This difficulty re-establishing momentum may have been due to several causes including lack of awareness that the site had been re-launched and difficulty with the new login procedures, but it is also likely due to the reassignment of all but one of the founding officers without a succeeding core group evolving out of the peripheral members of the forum.

The leadership of *S3-XO.net* was handed off a second time in January 2005, in an effort to institutionalize and stabilize the forum's foundation. The head of Fort Leavenworth's Center of Army Tactics has been assigned to oversee the community's progress, with a CGSC instructor serving as his action officer. CGSC instructors currently serve as part-time facilitators and one on-site contractor provides full-time technical and editorial support. Through a course requirement, CGSC students also play a facilitation role by participating in discussion threads. *S3-XO.net* in particular, and knowledge management in general, has the full support of the commander of the Combined Arms Center.

As of 2003, there were approximately 23,545 personnel in the *S3-XO.net* Regular Army target audience-- approximately 16,205 majors and lieutenant colonels and 7,340 captains on the career path that involves S3/XO positions (Gerber, 2003). Including Marine Corps or Reserve component personnel in the *S3-XO.net* target audience would approximately double its size (Gerber, 2003). Figure 2 depicts a screen capture of *S3-XO.net*'s main page as it currently looks.

S3-XO.Net

Welcome aboard new members. We have grown! We currently boast roughly 2500 future, current, and past S3s and XOs. Members have posted 5300 knowledge objects on our site. Our content continues to grow creating a vast knowledge-base for our users.

S3s and XOs are experts that are distributed across the Army and often disconnected from their peers. S3-XONet is your antidote to this problem. We promote a new method of collaboration, information exchange, and sharing of best practices across boundaries of time and distance. You will be able to contribute to the generation of new ideas and make valuable contacts. In addition, you will solve daily problems and foster individual competencies, making a significant contribution to overall Army learning. Check out **Net Call June 2005** to get the latest news on our portal.

This site is authorized to carry only unclassified FOUO information and below only. (FOUO) Tactics, Techniques, and Procedures that relate to Operation Iraqi Freedom, Operation Enduring Freedom, and Operation Noble Eagle (GWOT) should be considered classified confidential and distributed only via classified handling.

Forum	Thread	Posts	Date Posted	Posted By
Warfish Unit Open Discussion	MDMP for the collaborative unit (SBCY, 410, etc)	11	2005-06-07 9:07	Robert Thornton
Warfish Unit Open Discussion	Command Post of the Future	6	2005-06-06 19:01	James Barton

Figure 2. *S3-XO.net* Main Page

S3-XO.net Structure and Characteristics

The Plan

On 5 February, 2003, a draft list of requirements for *S3-XO.net* was prepared by one of the *S3-XO.net* founding officers. This list of requirements has been slightly modified for use as a list of requirements for all of the APFs in the BCKS Leader Network. In addition, a BCKS document (2005) detailing how to establish a forum on the Leader Network provides additional administrative requirements (particularly personnel requirements) that apply to *S3-XO.net*. The status of each component of the *S3-XO.net* plan is indicated in Table 8, with a justification for each status rating provided below.

Table 8. *S3-XO.net* Plan Status

Plan Component	Status		
	Red	Amber	Green
Statement of Purpose			
Envisioned Impact			
Description of Target Audience			
Statement of Cultural Norms, Core Values, or Conventions			
Specification of Roles and Responsibilities			
Functional and Technical Specification			
Overall Rating			

Statement of Purpose

S3-XO.net's statement of purpose states that *S3-XO.net* will: "Facilitate the effectiveness of battalion/brigade executive and operations officers..." and that it will capitalize "on officer's untapped stores of experience and knowledge helping leaders turn tacit knowledge into explicit knowledge and increase the learning curve of all those participating in the community." Although not stated explicitly, it appears in this statement of purpose that *S3-XO.net* is intended to be a helping forum because of its focus on disseminating tacit knowledge, an important determinant of practical problem solving (Wagner & Sternberg, 1985).

The implied target audience is Army officers who are either on the track to become a battalion (BN)/brigade (BDE) XO or S3, or are currently a BN/BDE XO or S3⁵. This may include captains, majors, and lieutenant colonels in the Active Component [approximately 23,545 personnel (Gerber, 2003), see above] and potentially these same officers in the Reserve Component (Gerber, 2003). The statement of purpose also implies that the content featured in the site should take the form of both discussion threads and practical products in order to facilitate tacit-knowledge transfer and articulation as explicit knowledge (this is described explicitly in

⁵ It may be argued that previous BN/BDE S3s or XOs, instructors, training developers, and doctrine writers are also members of the target audience because participation in *S3-XO.net* may support these individuals' efforts to enhance S3/XO effectiveness. However, to the degree that the forum is designed to address the needs of S3s/XOs, including these other people in the target audience (as opposed to playing supporting roles) may result in applying top-down structure to the forum or in defining the target audience too broadly, both of which will stifle activity (Gerber, 2003; Stuckey & Smith, 2004; Wenger et al., 2002).

other parts of the requirements document). Moreover, the general functional requirements of the system must include a way for forum members to download and upload files, to find each other, and to carry on conversation.

The statement of purpose was assigned a combined amber/green rating because although the statement has clear implications for target audience, it is less explicit about what type of forum *S3-XO.net* is intended to be or what audience it is intended to serve (see the next section for additional justification). This characterization is a critical one to make (Wenger et al., 2002).

Envisioned Impact

The *S3-XO.net* requirements document makes the following statements about envisioned impact: "... [*S3-XO.net*] will become a powerful tool in developing adaptive leaders, peer-to-peer knowledge transfer, relevant doctrine, and officers who are life long learners. There is also evidence to show that participation ... [will] increase commitment to the organization and Army service ethic." A list of potential areas of impact is also provided, and is reproduced below:

- "Foster innovation by encouraging the free flow of ideas and challenge status quo thinking
- Encourage life long leader learning
- Improve time management by streamlining research and development of manuals regulations, SOP, etc.
- Streamline operations and reduce costs by eliminating redundant or unnecessary processes
- Provide a sense of community, worldwide, among leaders stationed in the U.S. and deployed or stationed overseas
- Receive real-time feedback between institutional Army and field units
- Sharing of expert experience and wisdom (tacit knowledge)
- Converting expert tacit knowledge and experiences (wisdom) to explicit knowledge
- Capturing of "actionable" knowledge from lessons learned, operational experiences, projects, etc. that can be easily retrieved by interested parties
- Improving the quality of instructors by directly impacting the experience curve
- Providing a mechanism to increase peer to peer mentoring
- Creating a platform for sharing knowledge that starts in the classroom and can be extended into field operations"

This statement of envisioned impact provides a clear description of how the effectiveness of the target audience is to be achieved through participating in the forum. However, the statement does not describe where the impact will be (e.g., effectiveness in terms of the competencies and duties/responsibilities of the S3/XO are not defined) and therefore does not provide criteria for assessing this impact. Moreover, the impact statement also suggests that *S3-XO.net* is intended to be multiple types of forum at once, including helping, innovating, and knowledge stewarding, and is intended to serve multiple stakeholders. This implies that previous BN/BDE S3s or XO, instructors, training developers, and doctrine writers may be considered (implicitly or explicitly) as additional members of the target audience rather than as playing a supporting role in the forum or indirectly benefiting from the forum's activity. Potentially including these individuals in the target audience imposes a top-down structure to the content and discussion in the forum, which stifles forum activity (Gerber, 2003; Stuckey & Smith, 2004; Wenger et al., 2002). For these reasons, the envisioned impact was given a combined red/amber rating.

Description of the Target Audience

Neither the *S3-XO.net* requirements document nor the BCKS (2005) document includes a description of the needs of the target audience. Description of the target audience was therefore assigned a red rating.

Statement of Cultural Norms, Core Values, and Conventions

The *S3-XO.net* requirements document does not include a description of the cultural norms, core values, or conventions to be honored while participating in *S3-XO.net*. However, the BCKS (2005) document describes some conventions, including presenting only For Official Use Only and above (i.e., less restricted) information in the forum, not using the forum for promoting personal agendas or marketing commercial items, and keeping conversation professional (e.g., avoiding personal attacks and other negative behavior). While conventions are discussed, the values to be upheld in the forum are not, nor are the means for enforcing adherence to conventions and values. For this reason, the characterization of cultural norms, core values, and conventions has been assigned a combined amber/green rating.

Specification of Roles and Responsibilities

The initial *S3-XO.net* requirements document contains a brief, general specification of the roles and responsibilities of the forum support personnel. However, BCKS (2005) does detail roles and responsibilities. These include forum members, the leadership team, the chief editor, topic leads and point leads (i.e., facilitators), the administrative support team, and the sponsor. Specific duties/responsibilities are outlined for each role, as well as some guidance for how the roles interact/overlap. One shortfall in the otherwise exemplary specification of the roles and responsibilities is the apparent lack of a role for technical leadership and implementation. The Chief Editor is assigned some degree of responsibility over technical maintenance, and a software administrator is mentioned, but additional detail as to the interplay between technical implementation and forum evolution is not provided. In addition, the role of a core group is not specified. That is, although the roles of the leadership team described in BCKS (2005) seem similar to the roles of the core group, the importance of a passionate, dedicated, closely knit team to support the forum through informal leadership does not seem to be recognized. Because of the importance of both technical support and a passionate core group to forum success, the specification of roles and responsibilities has been given a combined amber/green rating. It should be noted that although this specification of roles and responsibilities is rather thorough, it has been drafted nearly two years after the release of *S3-XO.net*, so its impact on the current status of *S3-XO.net* may be somewhat limited.

Functional and Technical Specification

The *S3-XO.net* requirements document has a very detailed functional and technical specification that has also been recently updated. This specification includes conceptual as well as technical requirements, to include the knowledge-sharing behaviors that must be supported (e.g., carry on asynchronous and synchronous conversations, add content, etc.), network

requirements, front-end and back-end features of the site, and security requirements. The exemplary specification was assigned a green rating.

Personnel

Table 9. *S3-XO.net* Personnel Status

Personnel Category	Status		
	Red	Amber	Green
Leadership			
Core Group			
Facilitators			
Technical Support			
Overall Status			

Leadership

Financial support for *S3-XO.net* is channeled through funding designated for BCKS as a whole. Initial funding for BCKS came in the summer of 2004 from the Commanding General of I Corps in Iraq. The CG of the Combined Arms Center (CAC) at Fort Leavenworth has been assigned sponsorship of BCKS (and therefore, by extension, *S3-XO.net*), and is responsible for procuring additional funding in the upcoming fiscal years. The CG of CAC is supportive of knowledge management and of *S3-XO.net* in particular. From its inception, *S3-XO.net* was supported by the CAC CG, and continues to enjoy this support even after a change in general officers holding this position. Competition for additional funding appears to come from AKO, which is the institutionally recognized Army knowledge management solution.

S3-XO.net's formal leadership team is comprised of three individuals. Although all three of these people are supportive of knowledge management and horizontal knowledge sharing, none of them have assumed the leadership position voluntarily. These three leaders oversee the forum's development, address problem areas as they arise, provide general-level vision for the forum, and foster communication between the informal forum leaders and the BCKS sponsor. Leadership of *S3-XO.net* must compete with the numerous other responsibilities of these high-ranking individuals. Of the informal leaders, one is among the officers who founded the forum. Both of the informal leaders are passionate about the professional development of S3s and XOs, and work hard to bring *S3-XO.net* to the attention of the target audience, to develop the argument for securing support for the forum, and to provide administrative leadership to support personnel. However, these two dedicated leaders must also juggle multiple priorities, and have limited time to devote to leading *S3-XO.net*. The leadership team (formal and informal) will experience turnover of at least three of its members within a year as officers retire or are reassigned.

The sponsorship/leadership of *S3-XO.net* has been assigned an amber rating. The sponsorship and leadership of the forum is dedicated and supportive of the forum's mission, but currently lack the time and internal compass required to foster activity and growth in the forum.

Core Group

Currently, *S3-XO.net* lacks a core group. At no point in the forum's history did *S3-XO.net* have a group of core members who saw themselves as such and who took responsibility for ensuring the growth of the forum. *S3-XO.net*'s founding officers consisted largely of CGSC students or, in terms of the target audience, future S3s and XOs. Therefore these officers, while enthusiastic and skillful, were not fully representative of the target audience and ultimately saw the forum as a professional development tool for people other than themselves. With the help of their instructor, who was previously an S3 and an XO, they could articulate in general terms what an S3 or XO could hope to gain from membership in *S3-XO.net*, but they did not have first-hand experience with facing the day-to-day challenges of the S3/XO. They also did not have the benefit of having gained a large social network of S3s/XOs to work with in fully identifying target-audience needs and interests. Lacking this network, they did not have the means to rapidly post content in the forum that would generate discussion among current S3s/XOs or to link members to one another. The founding officers (with one important exception, who is currently on the leadership team), having left CGSC, are no longer actively involved in *S3-XO.net* and a core group of target audience members has not evolved to take their place. For these reasons, the core group for *S3-XO.net* has been assigned a red rating.

Facilitators

Responsibility for *S3-XO.net* facilitation is not clearly assigned to particular individuals. One on-site contractor is assigned full-time to the forum, but must split his time between facilitation and technical support, with the majority of his efforts devoted to technical support. Three members of the leadership team play some role in facilitation, as do CGSC instructors and a handful of on-site contractors. These people volunteer their time to post content on the forum that will facilitate discussion and to guide discussion into productive directions. While passionate about the professional development of the S3/XO, these people report having very limited time to devote to facilitation. Such duties as performing leadership activities or preparing course materials must take precedence over monitoring discussion threads, synthesizing knowledge on the forum, and actively linking forum members. There also appears to be some confusion as to whose initiative is key to the success of *S3-XO.net* -- the leadership, the facilitators, or the members themselves. Representatives of each group seem to believe a different group is primarily responsible for stimulating forum activity. For these reasons, *S3-XO.net* facilitation has been assigned a red rating.

Technical Support

Technical implementation of *S3-XO.net* is the primary responsibility of one on-site contractor who is assigned to the forum full-time both as technical support and as a facilitator. This person ensures that the online meeting space (including access rights) is working properly, makes changes to the look and feel of the forum, and resolves technical difficulties. However, *S3-XO.net* does not appear to have a formal role for technical leadership. This leadership role is necessary to provide vision for adapting the structure and appearance of the forum to meet the changing needs of the forum membership. Moreover, a representative of the on-site contractor and a member of the forum leadership have both reported that additional technical staff (e.g., a

Web designer) is required and that lack of funding and personnel has prevented them from doing several development activities they wanted to do. For these reasons, *S3-XO.net* technical support has been assigned an amber rating.

Functional Requirements

Table 10. *S3-XO.net* Functional Requirements Status

Functional Requirement Category	Status		
	Red	Amber	Green
Locating the Forum			
Joining the Forum			
Tone in the Forum			
Conversation Support			
Locating Content			
Locating People			
Overall Status			

Locating the Forum

S3-XO.net can be located through BCKS, via Google search, and through AKO. When using Google search, the search terms “S3-XO.net,” “S3 XO forum,” or “S3 XO knowledge” will return the *S3-XO.net* homepage as the number one hit. Using the search terms “S3 net,” “XO net,” or “XO knowledge” will return the *S3-XO.net* homepage within the first page of hits. Using the search terms “XO.com,” “XO forum,” “S3 forum,” or “S3 knowledge” will not return the *S3-XO.net* homepage in the first seven pages of hits⁶. Using the search term “S3.com” only returns one hit, and it is not the *S3-XO.net* homepage. Importantly, these results suggest that the Google-using officer seeking to join *S3-XO.net* should have some idea of what the forum is called in order to find it quickly. On the *S3-XO.net* splash page available via Google search, potential users can easily click on a link to begin the registration process.

To locate *S3-XO.net* via AKO, the potential member must first select the “Knowledge Networks” tab, then select “Battle Command Knowledge System,” then select “S3-XO.net” from two possible links. *S3-XO.net* cannot be found by entering “S3-XO.net” or related terms in the AKO search functionality. Here too, the implication is that the potential member must already have some idea of what they are looking for before they conduct their search. In the case of AKO, the potential member must also know that *S3-XO.net* is part of the BCKS, which is part of the Army Knowledge Network. Given our interviews with current and potential forum users, it is highly unlikely that the potential *S3-XO.net* user will have this knowledge unless someone from the forum has personally invited them to join⁷. The *S3-XO.net* splash page available via Google

⁶ The use of “seven pages” as a rough metric reflects the assumption that most people will have stopped searching and decided to use a new search term by the time they go through five or more pages of hits without finding what they were looking for.

⁷ Most of the officers we interviewed had not heard of the terms “community of practice” or “professional forum.” All of them, however, knew what *CC.mil* was. This suggests that “front-end” terminology (i.e., the forum name) should be used to aid potential members in locating the forum, rather than “back-end” terminology (e.g., the Army’s terms or theoretical terms).

search directs current users to login to the forum via AKO, but does not provide direction as to how to find the forum once inside AKO. In fact, the splash page says that logging in to AKO will allow the member to "proceed directly to the site." Clicking on the link to begin the registration process will allow current members to login, but this is not evident from the instructions provided on the splash page.

An important barrier to word-of-mouth advertising for *S3-XO.net* is that there are relatively few S3s and XOs in a particular unit (e.g., approx 3 S3s and 3 XOs in a BDE, as opposed to approximately 9 company commanders and 27 platoon leaders), who may or may not communicate or may see themselves as in competition with one another. The S3/XO population is therefore widely distributed and does not necessarily have the impetus to communicate amongst its members. It is especially important, then, for the *S3-XO.net* leadership to be active in getting the word out about the forum. In August 2005, the *S3-XO.net* staff plans to hold a membership drive geared towards students at CGSC. In addition, an invitation to join *S3-XO.net* will be sent to all Army majors. These efforts represent the first large-scale initiative to recruit new members. For these reasons, Locating the Forum is assigned an amber status.

Joining the Forum

To join *S3-XO.net*, prospective members must fill out a short online application and wait for approval. The on-site contractor assigned to the forum checks for membership applications on a daily basis and grants approval within 24 hours.

Four survey questions (complete survey is located in Appendix D) asked *S3-XO.net* members to indicate their impressions of joining the forum. These questions addressed the appropriateness of membership restrictions, the usability of the membership application, the time it took for membership to be granted, and the tone of the welcome letter sent out to new members. Seven members completed the survey questions out of 19 members to whom the survey was administered, comprising a response rate of 37%⁸. On average (i.e., across the four survey questions), the number of respondents giving the process of joining the forum a moderate rating was approximately 3. Three of seven people on average gave the process a high-moderate rating and approximately 1 gave it a high rating. For this reason, Joining the Forum is assigned an amber-green rating.

Where respondents expressed an opinion about membership restrictions, it was that the restrictions on membership are reasonable, but may require some modification. All respondents

⁸ It is unknown how representative of the *S3-XO.net* member population this small sample is. Only a small sample was taken in order to evaluate economically the feasibility of surveying members for their impressions of the forum. However, an attempt was made to make the sample surveyed as representative of the target membership as possible by selecting the following: 4 current S3s or XOs who started a conversation thread that contained multiple posts (1 person responded), 2 current S3s or XOs who started a conversation thread that contained only the single initiating post (1 person responded), 7 current S3s or XOs who had not made a conversation post but had visited the site within a month of the survey (4 people responded), 6 current S3s or XOs who had not made a conversation post but had become a new member and visited the site within a month of the survey (1 person responded). Nearly all of the members who belonged to these categories were administered a survey. This sample is the same survey sample used throughout this report. For the purpose of formally evaluating an APF, a much larger sample should be surveyed. A larger sample will also permit an analysis of the types of members whose needs are being met/not met by the forum.

agreed that the application form conformed to their expectations of an online form. In general, respondents indicated that the time it took for membership to be granted was 24 hours or less. The majority of respondents felt that the welcome letter was a nice gesture.

Tone in the Forum

New members who join the forum are greeted with an auto-generated welcome letter addressed from the Chief Editor. The letter is addressed to “Fellow Professionals” and indicates how the new member can contribute to the betterment of “hundreds of units.” The letter also indicates that the Chief Editor is there for the new member if he has an idea or feedback, and will do all he can to help. Although the welcome letter is important for building a sense of community in the forum, there may be some mismatch between the tone of the welcome letter and the tone that may be expected by the new member. That is, our interviews with potential members indicated that they would first join a community to meet a need and only later, if the need were consistently satisfied (and they had time), would they feel an obligation to contribute. In addition, Gerber (2003) noted that three key determinants of whether members of the target audience would use *S3-XO.net* were the utility of information, ease of use, and ability to network. It may be more effective for the welcome letter to place greater emphasis on how the forum will support the member than how the member can support the forum. It would also be preferable if the welcome letter were addressed to the new member individually or to “Fellow Professional” in the singular. This may make the form letter approach seem slightly more personalized. Finally, in the very first paragraph of the welcome letter it is indicated that the password provided during registration is incorrect and should be ignored. This does not set the tone that the forum support staff is on top of things technologically, and may make the user skeptical that the online meeting space will be usable. Of the 19 *S3-XO.net* members surveyed, the majority of respondents indicated that they felt the welcome letter was a nice gesture, but none indicated that the welcome letter made them feel like a valued new member of the forum.

At the top of the *S3-XO.net* homepage the overall function of the forum “Your connection for building better units” is clearly stated (e.g., compare to *CC.mil*: “Building combat-ready teams!”). The main page also presents a short description of the forum’s purpose, stated as follows: “A professional forum where professionals can come together to discuss current issues.” This statement sets up well the expectation that forum members are expected to maintain a positive, professional bearing. However, although this description is accurate, it is also somewhat vague. Moreover, as our interviews indicated, S3s/XOs initially entering the site are not particularly interested in having a conversation, but would like to find time-saving information quickly. The introductory text on the main page, containing update information, may be a suitable place to set a positive tone in a manner that is more engaging or directly relevant to the typical user. For example, this text includes a description of what the forum has to offer its members as well as a statement describing the security restrictions on what information can be shared in the forum. There is no Frequently Asked Questions section available in the forum, nor is there a user comments area, an area for press releases or other information, or a brief tutorial or introduction to the online meeting space.

There are two additional characteristics of the software used to build the online meeting space that may generate a tone not intended by the forum support personal, namely that members

are not truly free to use their judgment to make posts. The first characteristic is that discussion posts made by a member who has been purged from the forum remain in the forum, but the author designation changes from the author's name to "purged user." Members are purged from the forum for reasons other than malfeasance (e.g., the forum grows too large, and members of subgroups split off into different forums), but this is unknown to the current members. In one case in *S3-XO.net*, a purged user happened to have authored a discussion post that is critical of the logistical information management system used in Iraq. Because this is the only discussion post in the forum that takes a noticeably critical tone, readers of this post may assume that the user was purged for being critical of the Army. The second characteristic is that discussion posts that have been modified by forum support personnel (e.g., to correct spelling or make other minor changes) are appended with a statement that they have been modified and who did the modifying, but no indication of why modifications were made. This may create the impression that members are not in control of how their posts appear to others. Efforts to set the tone in *S3-XO.net* is here rated a combined red/amber for the above reasons.

Conversation Support

S3-XO.net is built on Tomoye Simplify, software specifically designed to support online social interaction. Tomoye allows members to build discussions around "knowledge objects" posted to the forum (e.g., documents, video clips, presentations, etc.) and/or to generate new conversations on related topics that are not specifically associated with an upload to the site. Powering discussion in this way, the use of Tomoye solves the problem of where to "locate" discussion in the forum because discussion is enabled everywhere (see Schweitzer, 2003). Because of its flexibility and ease of use, Tomoye is also the preferred software solution for supporting discussion forums within the Army and in other branches of the service (e.g., Navy; Kendall & McHale, 2003) and is recommended for the commercial sector (Schweitzer, 2003).

Discussion thread titles in *S3-XO.net* are authored by the initiator of the conversation, and generally reflect the conversation topic (e.g., "Request for a division TACSOP [tactical standing operating procedure]" and "Single COA [course of action] or Multiple?"). However, one or two threads have titles that are not related at all and suggest that the author was uncertain how to make a discussion post. For example "how can I ask for information or start a discussion" is the title for a conversation initiated by a request for information about improvised explosive devices. One or two initial conversation posts are duplicated in the forum, suggesting that the first time they made their posts these users were uncertain whether they had successfully uploaded them to the forum. Despite the occasional glitch, the conversation capability of Tomoye appears to work well, and includes helpful information for evaluating each post, such as its author and the date and time of the post. Currently, there is no capability for members to rate the utility of a conversation thread or individual discussion post. Because the current version of Tomoye is the backbone of a highly active APF (*CC.mil*), Conversation Support was rated green.

Locating Content

S3-XO.net has three methods available for locating content: a general search capability located at the upper right of the main page, a knowledge search capability located in the lower left, and a conversation search capability also located in the lower left of the main page. The

general search capability searches the entire forum, including conversations, documents, bios, and even topics, using keywords entered by the user. The knowledge search allows users to specify using keywords for the type of knowledge they would like to find. Searchable knowledge types include: Joint Planning; Chief of Staff of the Army Task Force Updates; References; Field Interview; Tactics, Techniques and Procedures, Lesson Learned; Topic; Dog Tag (i.e., member bio sketches); Institution; Multimedia File; Tool/Document; Website Link; Discussion; News Article; Event; Announcement; and Community. Once a knowledge type is selected, the user can indicate what fields he would like displayed and how he would like the results arranged by pressing a “filter” button and selecting items from a pull-down menu⁹. Unfortunately, the knowledge search capability does not have a “find” or “go” button, making it potentially robust but currently not functional because there is no way to initiate the search. The conversation search allows the user to search for keywords present in discussion threads. All of these search functions allow the user to sort search results in ascending or descending order, but it is unclear what is ascending or descending (e.g., number of posts or number of views or some other metric, such as date posted).

Each topic and sub-topic in the forum has a link that allows members to view the conversation and knowledge shared on that topic. Topics with recent posts are flagged with a flashing callout to indicate that a new conversation has taken place. In addition, a number featured next to the topic or sub-topic name indicates the activity associated with the topic. Activity associated with individual posts to the forum (i.e., the number of times a post has been viewed) is indicated by numbers that appear near the post’s title. However, the metrics used to track the number of views is currently inaccurate, the topic activity metric is not well understood, and the algorithm behind the flags indicating recent posts is not reliable. There is a “Rate this Page” functionality, which allows the user to rate a particular page on a scale of 1 (worst) to 5 (best). This rating functionality currently appears to exist only on the main page, however, and also does not apply to individual content contributions on the page.

Members of *S3-XO.net* receive an announcement via email that there is a monthly newsletter posted in the forum. The newsletter is accessed by clicking a hotlink on the main page called “Net Call (Month) (Year).” There currently is no content analysis or synthesis conducted in the forum. However, the current and future S3s/XOs we interviewed indicated that content that is analyzed and synthesized will be of maximal use to them. Links between content within the forum are possible, and can be made either by the facilitators or by forum members. Links to content outside the forum [e.g., at the Center for Army Lessons Learned (CALL)] may also be made or content may be brought in and made downloadable (e.g., field manuals). The forum provides links to CALL, BCKS, AKO, the Joint Electronic Library, and the Army Library Program.

Four survey questions (complete survey is located in Appendix D) asked *S3-XO.net* members (see footnote #8 in Joining the Forum for a description of the survey sample) to indicate their impressions of finding content in the forum. These questions addressed the ease of navigating content topics, using the search capability, finding new content additions, and understanding the arrangement of content. On average, approximately 3 respondents gave

⁹ There are different pull-down menu options, depending on what knowledge type is selected. Pressing the “filter” button links the knowledge type selected by the user to its associated data fields.

finding content in the forum a high-moderate rating. Two people on average gave finding content a high rating, 2 gave it a moderate rating, and approximately 1 gave it a low-moderate rating.

In general, respondents indicated that navigating content topics was easy or fairly easy. Most respondents indicated that the search capability worked fairly well with only occasional problems or that they had not noticed anything special about the search capability one way or the other. Respondents generally indicated that they had no trouble finding the new content additions to the forum. Respondents also agreed that the way content is arranged in the forum generally makes sense or that they had not noticed anything particular about how the content was arranged, good or bad. For all of the above reasons, Locating Content was assigned an amber rating.

Locating People

Through our interviews, we discovered that by the time officers are ready to assume the S3/XO duty position, they have already established many relationships within the organization, and have made decisions about who to trust. They must be able to locate people in the forum they already know and respect in order to feel that the forum can be of use to them. The ability to establish the credibility of strangers is critical in their determination of the validity (i.e., veracity and relevance) of posted content. The future S3s/XOs we interviewed also indicated that it would be highly desirable to be able to locate the current S3s/XOs in the units they are preparing to join. They are unable to locate this information easily through AKO or through installation homepages.

S3-XO.net has a member directory that allows members to alphabetically search for someone they think may be a member of the forum or to search for members depending on certain biographical criteria (e.g., duty status, assignment history, branch, etc.). Biographical sketches must include full name and email address. Sketches may also include home and duty phone, duty status, branch, current duty position, current duty station, deployments, S3/XO experience, topic areas of expertise, and links to the member's most recent posts (knowledge or conversation). Clicking on the name of a contributor to the forum allows members to access that contributor's biographical data. The main page of *S3-XO.net* features a list of the members who are currently logged in to the forum. These names can also be clicked on to retrieve biographical data. There currently is not a "featured person" area in the forum. However, *S3-XO.net* does enable members to indicate that they are an "interested party" in a particular topic (e.g., fire support, leader development, etc.). Experts in the topics for which there is an interested party may then direct their assistance to these members.

Locating People was assigned a green status, though in the specific case of *S3-XO.net*, it would be extremely beneficial to feature an additional directory that provides the contact information of members and non-members holding BN/BDE S3/XO duty positions in units Army-wide.

Structure and Characteristics - Recommendations

The Plan

Several sources have suggested that one can build a forum but that a separate, even more challenging effort is to get people to come to that forum (e.g., Dixon et al., 2005; Kendall & McHale, 2003; Wenger et al., 2002). Potential users must feel comfortable with the forum culture and confident that the forum will meet their needs. An in-depth understanding of the target audience is required to bring the forum to the attention of potential members and to ensure that initial activity in the forum is directed to member sensibilities and needs (Gerber, 2003; Stuckey & Smith, 2004; Wenger et al., 2002).

The overall rating of *S3-XO.net*'s plan is amber, with highest ratings for functional and technical specification and lowest ratings for identification and understanding of the target audience. The strengths and weaknesses of the current plan suggest that emphasis has been placed on the implementation of the forum at the cost of the purpose and goals of the forum. Particularly because *S3-XO.net*'s founding members were not current S3s and XOs and because the rapid institutionalization of the forum involves civilian contractors in the facilitation process, it is essential that the *S3-XO.net* support staff aggressively pursue an understanding of the target audience's needs. This could include visits to U.S. Army Forces Command (FORSCOM) installations to talk with S3s/XOs and their commanders, discussions with battlestaff observer/controllers at the combat training centers, discussions with officers in the pre-command courses who have recently left S3/XO positions, and interviews with S3s and XOs recently returned from deployment. Although future S3s/XOs make up part of both the group of founding officers and the target audience, these officers do not always know what their knowledge needs are and will benefit from the discussion of current S3s/XOs as they hash out their challenges in the forum.

In the end, the forum leadership and the other personnel supporting the forum should be able to articulate not only how they think participation in *S3-XO.net* will enhance unit effectiveness, but also where specifically they expect to see impact. Although a complete front-end analysis of the *S3-XO.net* target audience is beyond the scope of the present project, later sections of this report will hopefully begin to address this difficult but critical issue.

Personnel

Even with a solid understanding of the target audience, a great deal of activity on the part of a core group, facilitators, and leadership is required to generate self-sustaining APF activity (Dixon et al., 2005; Kendall & McHale, 2003). The *S3-XO.net* leadership and support personnel are extremely competent and passionate about officer professional development but unfortunately must juggle the needs of the forum with many other job duties. The forum requires several personnel dedicated full-time to accomplish its facilitation and marketing needs. These individuals ideally would be Army officers who have just completed S3/XO duty positions, who have elected the role of shepherding the forum, and who are reflective about their careers and their profession. If coupled with the ideal support personnel described above, additional full-time civilian contractors would also be a valuable aid in facilitation. However, clarification as to who

has primary responsibility for locating individuals, connecting members, and placing content in the forum must be clearly determined before additional personnel are dedicated to the forum.

Functional Requirements

The overall status of *S3-XO.net*'s functional requirements is amber/green, reflecting, as did the technical and functional specification of the forum plan, the strength behind *S3-XO.net*'s online meeting space. Tomoye Simplify supports robust social interaction, and pending updates to the software will enhance its potentially robust search capabilities. Where *S3-XO.net*'s functional requirements need improvement--Finding the Forum and Tone in the Forum--recent initiatives by the forum leadership and support staff suggest a promising future direction in recruiting and retaining the interest of new members.

S3-XO.net Social and Intellectual Capital

Connections

Table 11. *S3-XO.net* Connection Characteristics Status

Connection Characteristics	Status		
	Red	Amber	Green
Membership Composition			
Participating Members			
Identifying Experts			
Facilitation of Connections			
Connection Quality			
Overall Status			

Membership Composition

S3-XO.net membership data were downloaded from the forum on 8 April 2005. To prepare these data for analysis, duplicate accounts (33), guest accounts (1), invalid accounts (3), and purged user accounts (113) were deleted. In addition, incorrect data verifiable through AKO, such as title and duty status, were corrected¹⁰. Of the 2215 members retained for analysis, 697 accounts were missing significant portions of biographical data (i.e., all optional fields were blank). Because the *S3/XO* experience of the members lacking biographical data could not be determined using AKO, these 697 members are not included in the below analysis of membership composition. This creates a sample size of 1518 for *S3-XO.net* membership, approximately 69% of the total population of *S3-XO.net* members as of 8 April 2005.

Among the 1518 members in the *S3-XO.net* membership sample, 221 reported being current S3s/XOs and 285 reported being future S3s/XOs. Therefore, 33% of the total

¹⁰ This was done infrequently on a case-by-case basis where inconsistencies in the biographical data suggested an error. For example, a DA civilian or retired officer may list their status as "active duty" instead of "other" and "retired," respectively. Some reserve officers listed themselves as "Mr." instead of using their military title.

membership sample is a member of the target audience¹¹. Forty-five percent of the target membership is a current S3/XO and 55% is a future S3/XO. Assuming the 697 accounts lacking biographical data are representative of the 1518 accounts including biographical data, we could conclude that as of 8 April 2005 there are 731 target members in the total membership population, with 329 current S3s/XOs and 402 future S3s/XOs. According to Gerber (2003), the approximate size of the target audience for *S3-XO.net* is 23,545. With 731 current or future S3s/XOs, *S3-XO.net* would have approximately 3% of the target audience in its membership.

It is not certain that those members with significant portions of biographical data missing are representative of the sample of members whose biographical data are filled out. It may be the case that biographical data for some members were missing intentionally, for example for very high-ranking officers or non-commissioned officers. Other members who did not provide biographical data may not have taken the time to do so because they do not belong to the target membership and therefore do not see themselves as active participants in the forum. In any event, the difference between 731 members of the target audience (when using the entire membership population) and 506 members (when using the membership sample) is trivial relative to the size of the estimated target audience--a difference of one percentage point.

Because *S3-XO.net* members represent only 2-3% of the target audience, and only 33% of the forum membership is a member of the target audience, but there is a nearly 50-50 balance among current and future S3s/XOs, the assigned status for Membership Composition is red/amber. Note that since 8 April 2005, there have been, on average, 18 new people added to the *S3-XO.net* membership each week. Between 8 April and 23 June 2005, 202 new members have been added, 45% of which are target members. Although this rate of new membership is somewhat sluggish, it may reflect a promising trend of increased percentage of target members in the overall membership. The balance among current and future S3s/XOs in the recently added target membership also represents promising movement in a positive direction (54-46 compared to 43-57).

Participating Members

Conversation. To examine conversation composition, the principal investigator reviewed the 344 discussion posts present under "Conversations" headings in *S3-XO.net* as of 12 May 2005. Forum members who did not indicate their S3/XO experience were removed from the analysis, reducing the number of posts to 327. As shown in the table below, 34% of the conversation posts on *S3-XO.net* were made by target members. This percentage of contributions may be expected given that an estimated 33% of the total membership is a target member. Although the criteria for evaluating target member participation in conversation ["Green" (85%+)] are arbitrary in the sense that no particular percentage of target member participation in conversation has ever been linked to community health or impact, common sense suggests that a majority of the members participating in the conversation should be from the target membership in order for conversation to be relevant and to have a potential impact in the target community

¹¹ See Section I. The remaining 67% of the sample membership is composed of 175 former S3s/XOs, 834 members with "N/A" indicated for their S3/XO experience, and 3 missing entries. Eighty-seven percent of the 834 members with "N/A" indicated for their S3/XO experience were CGSC students, evidently not on track to become an S3 or XO. The remaining 13% had various duty positions, including either military or civilian positions.

(see also Gerber, 2003; Stuckey & Smith, 2004). Thirty-four percent falls short of the most liberal definition of majority (51% or more).

If the founding officers are considered target members, the percentage of conversation posts made by target members rises to just below 46% (this percentage does not include the contributions of one founding officer with multiple postings who is a past S3/XO). Of the original 34% of conversation posts made by target members, 24% of these posts was made by current S3s or XOs (compare to the fact that an estimated 45% of the target members are current S3s or XOs). If the founding officers are included, approximately 17% of the conversation posts were made by current S3s or XOs.

Table 12. Conversation Posts by *S3-XO.net* Member Role

Member Role	# of Conversation Posts	Percentage of Total Conversation Posts
Target Member	111	34%
Founding Officer	50	15%
<i>S3-XO.net</i> Staff	62	19%
Former S3/XO	53	16%
N/A	51	16%
TOTAL	327	100%

Note that the discussion in the forum may not represent the total amount of discussion that has occurred due to the forum. Forum members may initiate or continue discussion outside of the forum through email, telephone, or face-to-face contact. Contact outside of the forum may increase the impact of forum activity on officer development. Moreover, it is more likely that target members will initiate and maintain discussion outside of the forum than non-target members. Discussion and knowledge sharing inside the forum, however, must be relevant to target member needs in order to stimulate discussion and knowledge sharing outside the forum. Relevance may be at risk if relatively few target members are participating.

Knowledge. To examine knowledge contributions, a sample of 161 knowledge objects posted to the site as of 12 May 2005 were reviewed. This sample size reflects slightly more than half of the total number of knowledge posts¹². Four posts were removed from the below analyses because the S3/XO experience of the member having made the post could not be determined. Knowledge post types reviewed included tools/documents, website links, announcements, books, multimedia files, and ideas/tactics, techniques, and procedures/lessons learned. These type categories mirror those used in *S3-XO.net* to organize information. As shown in the table below, 17% of the knowledge posts on *S3-XO.net* were made by target members. If the founding officers are considered target members, this percentage increases to a majority contribution of 60%. Of the original 17% of knowledge posts contributed by target members, 26% was made by current S3s/XOs (compare to the fact that an estimated 45% of the target members are current S3s or XOs). When the founding officers are considered target members, this percentage

¹² Our estimate of approximately 283 knowledge posts differs significantly from the estimate of 5300 knowledge posts featured on the *S3-XO.net* homepage. Our estimate does not include conversation posts (approximately 341), member "dog tags" or bio sketches (approximately 2215), documents on *S3-XO.net* itself, located in the archives (approximately 24), topics (unknown number), institution descriptions (unknown number), or communities (unknown number).

decreases to 8% (this percentage does not include the contribution of one founding officer who is a past S3/XO).

In the case of both conversation posts and knowledge posts, current S3s and XOs were contributing at a lower rate than they are represented in the target membership. However, current S3s and XOs do not appear to be visiting the site at a lower rate than they are represented in the target membership. In 12 samples of *S3-XO.net*'s "members currently online" feature between 18 May and 10 June 2005, the proportion of current S3s/XOs online (relative to future S3s/XOs) roughly matched the proportion of current S3s/XOs (relative to future S3s/XOs) in the target membership. Whereas current S3s/XOs make up 45% of the target membership (as of 8 April), the average percentage of the target membership online (between 18 May and 10 June) that was a current S3 or XO was 49%. It is possible to conclude from this brief sampling of members online that current S3s/XOs are less likely than future S3s/XOs to post when they are online, not that they are online less frequently. In any case, because target members are making a minority of the contributions both in terms of conversation and knowledge unless the founding officers are considered, and the founding officers no longer actively participate in the forum, Participating Members was assigned a red status rating.

Table 13. Knowledge Posts by *S3-XO.net* Member Role

Member Role	# of Knowledge Posts	Percentage of Total Knowledge Posts
Target Member	27	17%
Founding Officer	67	43%
<i>S3-XO.net</i> Staff	31	20%
Former S3/XO	17	11%
N/A	15	10%
TOTAL	157	100%

Identifying Experts

Sixty-nine percent (1518/2215) of forum members provided complete or nearly complete biographical data, which other members could use to locate experts. However, only 17% provided information regarding areas of expertise. Of the current S3s/XOs, 44% provided expertise data; future S3s/XOs, 46%; and previous S3s/XOs, 50%. In comparison, only 4% of *S3-XO.net* members who selected "N/A" for S3/XO experience provided information regarding areas of expertise. Given that the large majority (87%) of the members who selected "N/A" for S3/XO experience did not expect to become an S3 or XO and may not see themselves as contributors to the site, it is reasonable to expect low level of expertise data from these people. In contrast, the key members of the forum (target members and experts) provided much higher and roughly equivalent levels of expertise data.

Three survey questions (see Appendix D for the complete survey) asked *S3-XO.net* members (see footnote #8 in Joining the Forum for a description of the survey sample) to indicate their impressions of finding experts in the forum. These questions addressed the ease of finding experts in the forum, the ease of finding experts external to the forum, and the confidence respondents had in expert members' willingness to help them. On average, 3 of the 7 respondents

gave finding experts a high-moderate rating. Approximately 2 people, on average, gave finding experts a moderate rating, and approximately 2 gave it a high rating.

Interestingly, for finding experts either in the forum or because of the forum (external experts), the modal response was that respondents had not given thought to using the forum to locate experts. Of those who did consider using the forum for finding experts, roughly equal proportions indicated that they were either confident or certain that the forum is a useful resource for locating experts. Respondents generally agreed that they were somewhat confident a forum member would help them if asked, with some respondents indicating that they were completely confident. For these reasons, finding experts was assigned an amber rating.

Facilitation of Connections

As mentioned previously, *S3-XO.net* enables members to indicate that they are an “interested party” in a particular topic, and experts in these topics may then direct their assistance to these members. However, it may be unlikely that an expert will contact an interested party for an open-ended discussion if a specific question has not been asked, so it is unclear how effective this feature is in facilitating connections. The sole person assigned to full-time support of *S3-XO.net* reported not having specific connections with experts in any of the content areas in the forum, though he did indicate that he was able to call on personnel stationed at Fort Leavenworth to help with answering some member questions.

Two survey questions (see Appendix D for the complete survey) asked *S3-XO.net* members (see footnote #8 in Joining the Forum for a description of the survey sample) to indicate their impressions of posting questions in the forum. These questions addressed how question posts were acknowledged and confidence in the facilitators’ ability to ensure that questions were adequately answered. Of the seven respondents to the survey, only four had posted a question. On average, five respondents gave posting questions a moderate rating. Approximately one person, on average, gave posting questions a high-moderate or high rating. One person on average gave posting questions a low-moderate rating.

Of the four respondents who posted a question to the forum, the majority could not remember if they had received an acknowledgement of their posting, but one member recalled never receiving an acknowledgement. The majority of respondents also indicated that they had not considered how far they thought forum facilitators would go to help them answer a question. Of those respondents who had given it some consideration, all were confident that the facilitators would make an effort to help them answer their question, with equal proportions indicating they thought the facilitators would go “all out” versus “only so far.” For these reasons, Facilitation of Connections was assigned a red rating.

Connection Quality

Three survey questions (see Appendix D) asked *S3-XO.net* members (see footnote #8 in Joining the Forum for a description of the survey sample) to indicate their impressions of making connections in the forum. These questions addressed the ease of making connections in the forum, the utility of these connections, and the likelihood of re-using connections to get

additional help. On average, four people gave making connections a high-moderate rating. Approximately two respondents on average gave making connections a moderate rating, and zero a high rating.

Interestingly, the majority of respondents indicated having no opinion about how effective it was to seek help in the forum. Of those who expressed an opinion, there was agreement that help is generally received by those who request it. The majority of those surveyed also indicated that experts in the forum seemed to be a valuable resource but that they had not personally benefited yet from these experts. Finally, the majority of respondents indicated that, depending on the person, they would feel comfortable asking for help multiple times from an expert whom they had met in forum. Because the members we surveyed seemed positive about the quality of connections in the forum, but had not been actively seeking or had benefited from a connection, Connection Quality was assigned an amber rating.

Context

Table 14. *S3-XO.net* Context Characteristics Status

Context Characteristics	Status		
	Red	Amber	Green
Shared Narratives			
Shared Codes and Language			
Overall Status			

Shared Narratives

S3-XO.net provides opportunities to participate in shared experiences via book reviews. “Book Reviews” is a feature inside the “Professional Development” area on the site. One book, *American Soldier*, had been reviewed in a discussion thread featuring six conversation posts among two future S3s/XOs and three forum members who selected “N/A” for their experience as an S3/XO. Upon examination of the discussion thread around the book, however, it is not clear whether it should be classified as a shared experience. That is, after the second posting in the thread, the conversation moved away from the book to other topics, and it is not clear from their contributions that members joining the conversation late in the process actually read the book. The book evidently was as effective in generating conversation as other knowledge resources posted to the site, but the conversation may not have come out of a shared experience *per se*.

There were no other formally designated opportunities in or through *S3-XO.net* to participate in shared experiences. For example, the electronic calendar listing community events did not have any events listed and there were no other types of collaborative exercises.

Two survey questions (see Appendix D) asked *S3-XO.net* members (see footnote #8 in Joining the Forum for a description of the survey sample) to indicate their impressions of shared experience via the forum. These questions addressed the sense of professional community gained from the forum and the sense of shared experience with forum members. On average, five respondents gave sharing experience a high-moderate rating. Approximately 1 person gave sharing experience a moderate rating, and one gave it a high rating.

The majority of respondents indicated that they could envision a strong sense of professional community and shared experience developing in the forum, but did not report that such a sense of shared community or shared experience had already developed. Roughly equal proportions of those surveyed reported that they had no opinion regarding a sense of professional community or shared experience or that they had already developed a sense of professional community or shared experience. For these reasons, Shared Experience was assigned an amber rating.

Shared Codes and Language

One survey question (complete survey is located in Appendix D) asked *S3-XO.net* members (see footnote #8 in Joining the Forum for a description of the survey sample) to indicate their impressions of the nature of the content in the forum. The modal number of respondents (3) indicated that sometimes content is out of their area of interest (e.g., branch), but overall it is not a problem. Roughly equal proportions of the remaining respondents indicated that they felt the content generally spoke well to their area of interest, that they had not noticed one way or the other whether content spoke to their area of interest, or that they have had to work to find content speaking their area of interest. Therefore, shared Codes and Language was assigned an amber rating.

Content

Table 15. *S3-XO.net* Content Characteristics Status

Content Characteristics	Status		
	Red	Amber	Green
Contributing Members			
Content Synthesis			
Content Organization			
Content Activity			
Content Quality			
Professional Links			
Overall Status			

Contributing Members

As shown in the table below, of the 157 knowledge posts examined, the majority was located in either in the tools/documents area (39%) in each topic or situated within conversations (41%). The significant majority of knowledge posts found in tools/documents was made by the founding officers and facilitators (82%). Contributions of knowledge posts during conversations were more evenly distributed among founding officers and facilitators (34%), target members (31%), former S3s/XOs (17%), and members who selected "N/A" for their S3/XO experience (18%). Target members made nearly all of their knowledge posts (96%) in conversation, rather than in the tools/documents area. That the vast majority of target member posts occurred in the context of a conversation suggests that target members currently are more likely to take the effort to respond to a specific request for knowledge sharing, rather than to respond to an abstract,

perceived need in the larger community. This is in contrast to the posting activity of facilitators and the founding officers, who made 30% of their posts in the context of conversations.

As shown previously in Table 13, 17% of the *S3-XO.net* knowledge posts sampled was made by target members, falling short of a 51% majority. If the founding officers are considered target members, this percentage increases to a majority contribution of 60%. Of the original 17% of knowledge posts contributed by target members, 26% was made by current S3s/XOs (compare to the fact that an estimated 45% of the target members are current S3s or XOs). When founding officers are considered target members, this percentage decreases to 8%. Because target members are making a minority of knowledge posts unless founding officers are considered, and the founding officers are no longer actively participating in the forum, Contributing Members was assigned a red status rating.

Table 16. Knowledge Post Locations

Location	# of Posts	Percentage of Posts
Conversations	65	41%
Tools/Documents	62	39%
Website Links	22	14%
Multimedia Files	3	2%
Announcements	3	2%
Books	1	1%
Ideas/TTPs/Lessons Learned	1	1%
Total	157	100%

Content Synthesis

Two of the 324 conversation posts in the forum featured a link to other conversations in the forum. Both of these posts were made by the same member, a future S3/XO who was attempting to draw attention to the discussion thread he had started in another topic area. In one case, the conversation in which the link was featured was related to the target conversation of the link. In the other case it was unrelated. One of the 102 conversations started in the forum had some degree of summarization made by a facilitator who was also a previous S3/XO. Six of the 102 conversations featured comments on the discussion itself (e.g., whether it was on track), which were made by facilitators, a future S3/XO, and members selecting “N/A” for their S3/XO experience. Of the 157 knowledge posts reviewed, two or three were posted in multiple related topics. One post, a video-captured interview, was broken into several components and the components distributed to relevant topics.

Although some attempt has been made to cross-reference posts in the forum, much of the related content and conversation remain distinct from one another. In each new topic page (e.g., Warfighting→Operations), frequently there are separate areas for conversation, tools/documents, website links, etc., but there currently is no cross-linking of related posts in these separate areas. For example, in Admin/Log→Maintenance Meetings, there are four separate but highly related conversations about maintenance meetings that are not cross-linked or consolidated, nor are they cross-linked with maintenance meeting related documents in the Tools/Documents area on the same page. This is the case across topic pages as well as within topic pages. For example, in

Warfighting→Open Discussion, there is a discussion thread on how combat training centers have changed given the new warfighting environment. This discussion is not referenced, however, in Training→Combat Training Centers. As another example, there are several discussions and knowledge posts related to the military decision-making process in several different topic pages, but only one of them is linked to another. For these reasons, and because discussion summarizations have not yet been made, Content Synthesis was assigned a red rating.

Content Organization

Content in *S3-XO.net* is organized according to the fundamental duties of S3s and XOs--warfighting, training, leadership, administration/logistics, and transformation--and includes other top-level topic categories addressing the profession—First 90 Days, Tools and References, and Professional Development. Each top-level topic category features its own content, but also has several sub-topic categories constructed around more specific topics. Some sub-topics, in turn, have their own sub-topics. In the absence of a formal examination of the knowledge structures of S3s and XOs, there are no rigorous criteria for evaluating content organization, but the current organization seems reasonable, given what is explicitly known about the professional lives of S3s and XOs. Furthermore, an informal review of the content in *S3-XO.net* does not raise serious questions as to why particular knowledge objects or discussion threads are located where they are.

Recall from previous discussion that of a small sample of *S3-XO.net* members surveyed, respondents (86%) generally indicated that navigating content topics was easy or fairly easy. Respondents (86%) also generally indicated that they had no trouble finding the new content additions to the forum. Respondents (86%) agreed that the way content is arranged in the forum generally makes sense or that they had not noticed anything particular about how the content was arranged, good or bad.

The only concern raised by the content organization was that it appeared to be driven from the top down, rather than from the bottom up. A formal assessment of S3/XO knowledge structures (to include tacit as well as explicit) has not been conducted. Moreover, there were intermediate-level sub-topics that have very little content or no content at all, suggesting that the topic headers were placed before the content accumulated to justify such headers. Content distributed across inorganic categories could be consolidated until organic categories arise from forum activity. The dispersion of content was not a grave concern, save that it may have had implications for usability and member engagement. The software supporting the online meeting space was rather slow, and the time required to move between multiple topic pages may have discouraged browsing. For these reasons, Content Organization was assigned a green rating.

Content Activity

Content activity was difficult to track because knowledge posts do not have upload dates associated with them and download metrics evidently were not tracked by Tomoye. Approximate measures of content activity, as presented here, must therefore suffice. The table below shows the percentage of each type of knowledge post made by founding officers, all but one of whom has been largely inactive in the forum since the June of 2003 (the active founding officer's posts

are excluded from the table). It may be assumed, then, that the knowledge posts made by these individuals are approximately two years old. The remaining posts are therefore two years old or younger. By dividing the remaining number of posts by 96¹³ we obtain an estimate of the average weekly rate at which new knowledge posts in the sample have been added to the forum. The rate projected for all knowledge posts, because the sample examined here is approximately half of the total knowledge posts on the site, would be approximately double the one shown in Table 17. This gives an average rate of .27 posts a week. In contrast, one post every 12 hours would equal a rate of 14 posts per week, per topic. There are eight high-level topics in *S3-XO.net*, so a lower-bound active rate for content update is 112 posts per week. As shown in Table 17, the number of posts per week in *S3-XO.net* was well below the lower-bound active rate for content update. For this reason, Content Activity is assigned a red status rating.

Table 17. Founding Officer Contributions to Knowledge Posts

Location	# of Posts by Founding Officers	% of Posts	# Remaining Posts	# Posts per Week
Conversations	7	11%	58	.60
Tools/Documents	37	60%	25	.26
Website Links	18	81%	4	.04
Multimedia Files	1	33%	2	.02
Announcements	2	67%	1	.01
Books	0	0%	1	.01
Ideas/TTPs/Lessons Learned	1	100%	0	0

Content Quality

The 161 knowledge posts that were sampled from *S3-XO.net* were analyzed for the degree to which their associated context could assist the user in determining whether the post was relevant to them and adequate for their purposes¹⁴. The rubric for evaluating the contextualization of website links was as follows:

Context was defined as the information associated with the website link regarding (1) what information can be found at the link; (2) the quality of that information or the conditions under which the information can be of use; and (3) the means for accessing that information if the link does not work. Website Link posts were assigned a numeric rating of their contextualization, with 0 indicating no contextualization and 3 indicating sufficient contextualization. A rating of 3 was earned if all three aspects of context were addressed, a 2 if two aspects were addressed, a 1 if one aspect was addressed, and 0 if none of the aspects was addressed. Context was determined not only from the information provided by the contributor, but also by (a) surrounding discussion posts, including comments associated with a knowledge post not made in the context of a conversation; (b) information gleaned from the link name; and (c) inferences that could be made

¹³ This number is derived by multiplying 52 times 2 and subtracting 8, which is the approximate number of weeks the forum was shutdown and moved behind AKO.

¹⁴ Note context ratings should be independently assigned by a subject matter expert and compared to the context ratings presented here. This step is necessary to validate the present rubric.

about the quality or the nature of the information at the link depending on its location (e.g., CALL vs. USA Today).

The rubric for evaluating the contextualization of non-website link knowledge posts (i.e., tools/documents, multimedia files, and ideas/tactics, techniques, and procedures/lessons learned) is as follows:

Context was defined as the information associated with the knowledge upload regarding (1) the purpose/use of the upload; (2) the source of the upload; and (3) the quality of that upload or the conditions under which the upload can be of use. All knowledge uploads were assigned a numeric rating of their contextualization in a fashion analogous to rating website link posts. Similarly, context was determined by factors in addition to the information provided by the contributor of the upload, including (a) surrounding discussion posts; (b) information gleaned from the name of the file; and (c) inferences that could be made about the quality or nature of the upload depending on its source or author.

Context ratings for Website Link posts sampled ($N = 43$) ranged from 0-3, with an average of 1.72 and a mode of 2. For all other knowledge uploads sampled ($N = 118$), ratings also ranged from 0-3, with an average of 1.98 and a mode of 3. Website Link posts earning lower scores often did so because they lacked instruction for accessing the information provided at the link if the link did not work. In our exploration of Website Link posts, we tested 19 such posts and found that 42% did not work. For this reason, such instruction is critical for Website Link posts to be useful. Other knowledge uploads earning lower scores often did so because they lacked information regarding what their purpose/use was. This occurred more frequently when knowledge uploads did not appear in the context of a conversation, but were posted independently of a specific request or discussion. Knowledge uploads in the context of conversation earned an average context rating of 2.10, whereas knowledge uploads external to conversation earned a context rating of 1.67.

Obviously, this context assessment is subjective, conducted by an examiner who is quite external to the target membership. Contextualization information should be provided by the members of *S3-XO.net* themselves through ratings of individual knowledge posts and feedback on their ease/difficulty of application. Evidence of such assessment is present in *S3-XO.net* where members asked clarification questions about knowledge posts and where they indicated that a knowledge post was of particular use. However, there currently is no easy, systematic means for them to share their views on individual knowledge posts.

One survey question (see Appendix D for the complete survey) asked *S3-XO.net* members (see footnote #8 in Joining the Forum for a description of the survey sample) to indicate their impressions of the utility of content downloads in the forum. The majority of respondents (4) indicated that they had found at least three downloads in the forum that have been very helpful. Equal proportions (1) of the remaining respondents indicated that they have found one useful download and are confident there will be more, that they have not given much thought to how useful the downloads are, or that they have not yet found a useful download. For all of the above reasons, Content Quality was assigned an amber status.

Professional Links

S3-XO.net currently does not provide access to leader-development opportunities that are either available outside the forum [e.g., the Think Like a Commander adaptive-thinking training program, Lussier, Shadrick, & Prevou (2003), or simulations or other materials used in instruction at CGSC] or organic to the forum (e.g., situational judgment vignettes, collaborative exercises, etc.). For this reason, Professional Links is assigned a red rating.

Conversation

Table 18. *S3-XO.net* – Conversation Characteristics Status

Conversation Characteristics	Status		
	Red	Amber	Green
Participating Members			
Conversation Activity			
Conversation Quality			
Overall Status			

Participating Members

As shown previously in Table 12, 34% of the conversation posts on *S3-XO.net* have been made by target members. Even when the founding officers are considered target members, the percentage of conversation posts (46%) falls short of the most liberal definition of majority (51% or more). Twenty-four percent of the conversation posts was made by current S3s or XO, when founding officers are not considered target members, and 17% of the posts were made by current S3s or XO when founding officers are considered to be target members. For this reason, Participating Members is assigned a red status rating. Again, however, it should be noted that discussion in the forum might not represent the total amount of discussion that has occurred due to the forum.

Conversation Activity

As of 12 May 2005, there were 107 unique discussion threads initiated in *S3-XO.net*. Forty-eight of these threads (45%) are one-post threads. Of these 48 one-post threads, four clearly belong to multiple-post threads, but have somehow become separated, resulting in 103 unique discussion threads. The proportion of post type in the remaining 44 one-post threads is compared to the proportion of post type in the initiating discussion posts for multi-post threads in the table below¹⁵. The rubric for assigning a type to a discussion post is as follows:

Invitation to Build “New” Knowledge – Invitations to build “new” knowledge are general statements or open-ended questions that address a novel, distal, or

¹⁵ This rubric was developed through an iterative process in which two raters assigned a post type to a sample of the 103 initiating posts, collaboratively refined the rubric, assigned a post type to another sample of the initiating posts, and so on. Inter-rater agreement reached using the above rubric was 80%. Where disagreement occurred, a final post-type assignment was given on the basis of discussion between the two raters.

somewhat theoretical topic. In general, these invitations address organizational matters, such as policy, structure, future directions, etc. The inference is that the person initiating the discussion is not seeking one “right” answer as a basis for action, but wishes to muse collaboratively with the professional community about a broad topic. Asking the question does not assume that other community members have personal experience with the topic but that they are likely to have an educated, professional opinion.

Request for Input – Requests for input are questions that seek to gather a range of opinions about or experiences with a particular topic, generally a proximal matter of technical or tactical procedure. The inference is that the person initiating the discussion assumes that others in the community have personal experience with the topic, that there may be more than one right way of addressing the question, and/or that sampling multiple perspectives is necessary to construct an effective answer to the question.

Directed Question – Directed questions seek a “definitive,” even “yes/no” answer to a concrete question. Rather than seeking the collaborative opinion or experience of the professional community, the directed question is an attempt to validate or augment information or receive clarification using the expertise of someone in the professional community with relevant experience/knowledge. The inference is that the person asking a directed question assumes that somebody already has a “correct” answer and seeks to engage that person.

Request for Knowledge Resources – Requests for knowledge resources ask members to provide tools/documents or other knowledge products that can be applied to unit functioning, such as tactical SOPs and training schedules. These requests may be accompanied by a request for input or directed question, but are assigned as requests for knowledge resources when the apparent emphasis is on receiving tools, rather than opinions, experiences, or instruction.

Request for Expert – Requests for expert ask members to refer someone who has particular knowledge in a specific area. The inference is that the person making the request assumes that someone in the forum is or knows an expert in a particular area. If a request for expert is accompanied by a request for input, a directed question, or a request for knowledge resources, emphasis is placed on these other modes of inquiry rather than on the request for expert.

Information Post – Information posts do not ask a question, but provide information about a topic. This information may be a summary of some kind, and/or may include either a link to a website, a tool/document to download, or a description of an external knowledge resource. Generally, the Information Post contextualizes the knowledge resources to which it refers. However, if an information post is accompanied by a request for input, a directed question, or an invitation to build “new” knowledge, emphasis is placed on these other modes of inquiry rather than on the fact that information was posted.

Unknown – Unknown initiating posts appear to be an answer to someone else’s question or comment, but they cannot be clearly linked to any of the extant conversation threads. These posts may address by name the unknown inquirer to whom they are responding or may indicate agreement or disagreement with an unknown conversation partner.

Table 19. Type of Initiating Posts for One-Post and Multi-Post Discussion Threads

Post Type	# Initiating 1-Post Threads	% of Total	# Initiating Multi-Post Threads	% of Total
Invitation to Build “New” Knowledge	1	2%	6	10%
Request for Input	6	14%	17	29%
Directed Question	7	16%	10	17%
Request for Knowledge Resources	7	16%	9	15%
Request for Expert	0	0%	2	3%
Information Post	20	45%	14	24%
Unknown	3	7%	1	2%
Total	44	100%	59	100%

Fifty-seven percent of the 103 initial discussion posts were followed by a response. Sixty-eight percent of the initial discussion posts that were explicit requests for conversation (i.e., invitations to build “new” knowledge, requests for input, directed questions, requests for knowledge resources, and requests for expert) were followed by a response. This moderate rate of response to questions posed in the forum combined with the fact that only 28% of all posts was followed by another post within 24 hours (and none of these was an initial post), resulted in a red-amber status rating for Conversation Activity.

Note, however, that there are already almost as many discussion posts between 1 January 2005 and 12 May 2005 as there were in the entire year of 2003. This increase in posts bodes well for the Conversation Activity in *S3-XO.net*. However, only 46% of the initial discussion posts made in this time have been followed by a response, and only 24% of these posts were followed by another post within 24 hours (none of the posts followed by another post within 24 hours was an initial post). None of the promises to post additional information, replies, etc., made by discussion participants were fulfilled through the forum, nor have any clarification questions been answered in the forum. This reflects a decrease in the conversation activity from the previous two years (compare 46% response rate in 2005 with 57% in 2003). Responding to explicit requests for conversation also decreased from 68 to 58%.

Conversation Quality

In general, high standards of professionalism have been maintained in *S3-XO.net*. Of the 341 discussion posts reviewed, only one post was found to have an arguable level of professionalism. This post was a referral to a debate going on in another conversation thread. This referral would qualify as a helpful link to related conversation, except that the conversation

designated by the referral was completely unrelated to the conversation in which the referral was situated. This gave the referral the feel of a pop-up ad.

As indicated in Table 19 above, 59 of the conversations started in the forum as of 12 May 2005 have resulted in conversation threads featuring two or more posts. These 59 conversations were analyzed for the type of posts involved and for the flow of conversation succeeding the initial post. The one multiple-post conversation thread that began with an "Unknown" initiating post type was not analyzed because it was unclear how the conversation should flow from such a post. Additionally, a conversation initiated by an information post was not analyzed because the only other post involved was an advertisement for an unrelated thread (see the above paragraph). The remaining 57 conversations were analyzed in detail. In the absence of definitive tools for analyzing discussion content in knowledge-sharing forums, we sampled from the scholarly literature where appropriate.

Invitations to Build "New" Knowledge. Six posts initiating multiple-post threads were invitations to build "new" knowledge. Quality conversation following an invitation to build "new" knowledge involves collectively constructing understanding or perspective that has not previously been achieved. The product of the conversation is collectively "owned." That is, discussants should come away from the conversation with the feeling that they have participated in creating something new--knowledge that was not possessed by any of the discussants prior to the interaction. This requires that discussants share and discuss perspectives on information, identify and explore areas of disagreement, participate in the negotiation of new meaning, test and modify new meaning, and come to consensus on new meaning (Gunawardena, Lowe, & Anderson, 1998).

Five of the six invitations received more than one response. In two of the conversations, discussants contributed knowledge products to aid the discussion. Importantly, four of the conversations involved discussants interacting with each other, commenting on or building from each other's contributions. In addition, two of the six conversations featured a comment on the direction of the conversation by one of the discussants. However, none of the conversations featured a post that closed the loop, indicating that the discussants believed the knowledge-creation process had been completed or that something had been learned from the process. Four of the six conversations involved individual discussants making multiple contributions, but only in one case did more than one person make multiple posts to the conversation. It appears that invitations to build "new" knowledge can be active (average thread length was 6 posts), but also that they seem to stop before new knowledge is constructed.

Requests for Input. Seventeen of the initiating posts were requests for input. Quality conversation following a request for input involves the sharing of multiple perspectives and achieving a more complete, or representative, understanding of a complex phenomenon. This requires that the discussion have multiple participants constructively sharing their perspectives and a synthesis of these perspectives that illuminates the trends in the information or attitudes shared.

Twelve requests for input received multiple responses (between two and nine), and nine spawned 17 related questions. Four of the related questions were answered, and two received

comments. None of the three clarification questions raised were answered. Five of the conversations featured comments on aspects of the discussion, two of these conversations featuring multiple comments. As with invitations to build “new” knowledge, requests for input engaged active responding (7 posts on average). However, as was the case previously, the synthesis and dialogue critical to building new understanding generally did not take place.

Directed Questions. Ten initiating posts were directed questions. Quality conversation following a directed question involves answering the question posed. The asker should come away from the discussion with actionable knowledge that he did not previously have. This requires articulating one’s question to elicit the required answer and engaging discussants to provide information until a satisfactory answer is reached.

All ten questions were answered either by a direct answer (6) or by reference to knowledge resources (4). Two questions received multiple answers and two featured comments on aspects of the discussion. One of these comments was on the discussion itself and one involved a summarization of what was said in the preceding posts. Two clarification questions were asked, but none was answered. Three conversations spawned four related questions, two of which were answered. Two of the directed questions received offers of assistance. Here too, members appeared responsive to other members’ needs, although the dialogue necessary to ensure the answer is maximally relevant (e.g., answering clarification questions) did not occur. None of the ten conversations featured a post that closed the loop, indicating that the question initially asked had been answered.

Requests for Knowledge Resources. Nine of the initiating posts were requests for knowledge resources. Quality conversation following a request for knowledge resources involves referring the requestor to the knowledge resources he seeks and ensuring the requestor can access and apply the resources referred to him. This requires delivery of or direction to resources and providing context for applying these resources.

All of the nine requests were responded to either by one or more references to knowledge resources (5 requests), offers of assistance (2), or some combination of the two (2). Six requests received between two and five references to knowledge resources. Three conversations featured comments on the requests or the knowledge resources referred. Requests for knowledge resources appeared to have engaged productive responding. However, none of the nine conversations featured a post that closed the loop, indicating that the initial need had been met.

Requests for Experts. Two of the posts initiating multiple-post threads were requests for experts. Quality conversation following a request for an expert involves providing the requestor with a referral. In both conversations, a referral was made, and one request received an offer of assistance. As with requests for knowledge resources, requests for experts appeared to result in productive interaction with *S3-XO.net* members and facilitators. Here too, however, none of the requests for experts featured a close-the-loop post indicating that the requester made the connection he needed.

Information Posts. Thirteen of the posts initiating multiple-post discussion threads were information posts. Quality conversation following an information post involves questioning and

commenting that contextualizes the information provided, gauging its quality and applicability to potential users.

Eight of the information posts received comments from *S3-XO.net* members on the post itself or on the topic of the post more generally. Two information posts received multiple comments. One highly decontextualized information post received a clarification question, but it was not answered. Eight of the information posts spawned nine related questions, three of which were answered. Overall, information posts did not generate a great deal of discussion. The average length of discussion threads initiated by information posts was 3 posts (including the initiating post). It is possible that conversation was not necessary to sufficiently contextualize the information posts, but attempts by *S3-XO.net* members to use the conversation for learning (i.e., through related questions) generally did not engage other members.

One survey question (see Appendix D for the complete survey) asked *S3-XO.net* members (see footnote #8 in *Joining the Forum* for a description of the survey sample) to indicate their impressions of the utility of conversations in the forum. The modal number of respondents (4) indicated that they had read one valuable conversation in the forum and that they are confident there would be more. Roughly equal proportions of the remaining respondents indicated that they have read at least three valuable conversations (2) or that they had not yet read a valuable discussion (1). For these reasons, Conversation Quality was assigned a red-amber status.

Social and Intellectual Capital - Recommendations

Connections

Membership composition is key to generating productive activity in the forum (Stuckey & Smith, 2004; Wenger et al., 2002), and *S3-XO.net* requires a significant increase in target members. Rather than focusing recruitment efforts on CGSC students, greater emphasis should be placed on recruiting current S3s and XOs through, for example, advertisements of the site on installation homepages and on other discussion forums (including the informal chat forums in AKO), exchange with National Training Center observer/controllers, and visits to installations. The upcoming membership drive planned by the *S3-XO.net* support personnel is a step in the right direction, but more active recruiting of current S3s/XOs may be necessary. Once members have been recruited, it may be helpful to make it a requirement to supply biographical information, especially information about assignment history. Ideally, new members will see themselves as contributors to the forum and voluntarily provide this information, but currently approximately 48% of new target members do so. Yet, according to our interviews with current and potential members of *S3-XO.net*, this information is critical in establishing the credibility of post authors. Our interviews also indicated that the target audience of the forum is highly desirous of being able to locate the S3s/XOs in the units they are assigned to for their next S3/XO duty position. Locating these officers, keeping their contact information current in the forum, and ideally, recruiting these officers to participate in the forum would represent a difficult but very important step toward facilitating the development of connections.

Context

The opportunities to develop shared narratives in *S3-XO.net* seem relatively infrequent and sparsely attended. Alternative methods to book reviews for creating shared experiences may prove to be more engaging if they take less time and are more directly related to the jobs of the S3/XO. These methods might include product critiques (e.g., tactical operations center setups, training plans, etc.) or professional article critiques (e.g., publications in *Armor* magazine, *Military Review*, or *Parameters*). If they are carefully created, command challenges such as those found on *CC.mil* may also generate discussion in a direction more closely related to matters of leadership, interpersonal relationships, and ethics. Facilitators should use their own social capital to arrange for multiple members to participate in a shared experience at one time in order to generate activity and interest. Simply posting the opportunity may not be enough, as the relatively sparse discussion surrounding other knowledge or information posts indicates.

Content

Content activity is sluggish, and mostly driven by non-target members of the forum. Moreover, four percent (approximately 7) of the 157 contributions sampled were made by a current S3 or XO. There are multiple possible explanations for why there are relatively few knowledge postings to the site, especially by current S3s/XOs, including (a) S3s/XOs with limited time only post knowledge when it has been directly requested; (b) S3s/XOs feel reluctant to share their knowledge either out of a sense of competition, anti-intellectualism, or concerns about criticism; or (c) current S3s/XOs do not see themselves as contributors to the forum. Contact and encouragement by facilitators may help increase posting by target members, if these members are not posting for the above reasons (Dixon et al., 2005).

In contrast, content organization and contextualization in *S3-XO.net* appear to be effective. However, some minor changes could increase the ease by which content is accessed and reviewed for relevance. First, the front page of the forum should be changed frequently by featuring new content, new members, or new points of interest for the S3/XO. Recent changes to the front page of the forum suggest a hopeful step in the right direction provided that follow-on changes do not take four months to occur. Second, related content should be consolidated such that discussions or knowledge objects on the same subject are not distributed throughout the forum unless they are distributed as a whole. Third, duplicate posts and duplicate headers should be removed (e.g., there are two Rear Detachment Operations folders inside Admin/Log; Leadership has an Ethics and Morals Folder and a Morals and Ethics folder). Topic folders without posts should be removed. Finally, unless metrics and counters provided by Tomoye can be explained or repaired, they should be removed. A couple of changes could enhance the contextualization of knowledge objects, including reducing the number of clicks required to get to comments on knowledge objects, featuring "date/time posted" information for all knowledge objects, and adding an enhanced rating capability such that individual objects can be rated and their ratings. Ratings and date/time posted information should be viewable before the object is clicked on.

Conversation

The implication of several interviews we conducted is that the role of facilitators is especially critical in a discussion forum that is geared towards S3s/XOs. The current S3/XO who would login to *S3-XO.net* is several years older than, for example, the current company

commander logging into *CC.mil*. S3s/XOs are more experienced with the Army as an organization, and therefore have more confidence in their place in the organization and in their ability to solve problems. S3s/XOs who are in the National Guard have the additional experience of having held down a successful career outside of the Army. For this reason, they may feel less need for affiliation/validation than company commanders. Among S3s/XOs in the active Army, there is a strong sense of competition for coveted command positions. S3s/XOs also deal with problems much larger in scope than company commanders. They must delegate projects, rather than tasks, and must deal with combined arms tactics and training. This makes them busier than ever (working 12-hour days and weekends) at a time when they are more likely to have families who place demands on their time outside of work. The greatest incentive for an S3/XO to participate in the forum, then, is confidence that the forum will get him what he needs when he needs it and obligation to give back what he has received. Facilitators must provide this incentive by ensuring that responses to member questions are timely and adequate.

Conversation in *S3-XO.net* is sluggish and it is unclear how useful the productive conversation is to members. Shorter times between posts not only would reflect greater activity, but also will generate greater activity. To increase the perception of activity in the conversation threads, discussions beginning and ending in 2003 or 2004 should be archived and made easy to reference. In addition, requests or questions for which there are multiple posts should feature some kind of follow up that closes the loop indicating how the request or question was addressed (see Dixon et al., 2005). Fewer conversations starting with references to knowledge resources or information posts may generate more discussion unless the forum staff can arrange to have multiple members generate and sustain conversation activity around such posts. Facilitators must actively link members with questions to members or other people with answers through exploration of the membership or making use of their own social capital (Dixon et al., 2005). Facilitators must use these connections to ensure that every question has some level of response (not just acknowledgement) within 24 hours.

Overall

The software supporting the *S3-XO.net* online meeting space, Tomoye Simplify, is generally recognized as the platform of choice for online communities of practice, at least in the military (Glennie & Hickok, 2003; Kendall & McHale, 2003). Tomoye is preferred by the military because it is more cost-effective than other software solutions available (including a solution developed in-house) and relatively easy to use both by facilitators and forum members. Importantly, it provides several of the functionalities key to effective collaboration, including asynchronous chat, search capability, and member databases.

Unfortunately, one limitation of Tomoye is that it is slow and it is often difficult to wait for new pages to appear. Effort should be made to reduce the number of steps members must go through to find particular items or simply to browse. Otherwise, members may lose patience and disengage from the forum. Some relatively straightforward changes that could address this limitation are as follows:

- 1) Provide information in the post initiating a conversation that indicates whether the conversation contains knowledge objects and when the most recent post to the conversation was made.

2) Show all of the sub-topics associated with a particular top-level topic even when the page opened is in a sub-topic. This way, members do not have to return to the top-level topic to view another sub-topic.

3) Add a "browse knowledge" capability so that members can see a list of all of the knowledge objects at one time, organized by topic/subtopic and with links to related discussion posts, including comments.

S3-XO.net Impact on Member Competence and Professionalism

Recall from earlier in this report that in order to manage the scope of individual-level impact assessment one should target those personal characteristics, competencies, and actions for which common or persistent problems have been identified in the target membership. In the case of *S3-XO.net*, the target membership is comprised of current and future S3s and XOs. Individual-level development should therefore prepare future S3s/XOs to assume their next duty position and should support current S3s/XOs as they perform their job duties.

Recall also that the feasibility of the quasi-experimental approach to assess individual-level impact is highly questionable. A reasonable proxy is to assess whether or not the content and discussion in *S3-XO.net* addresses the key problem areas in S3/XO competence and professionalism. The social and intellectual capital assessment criteria applied above could be used to assess the functional effectiveness of the forum content in the key areas of interest.

For these reasons, the following section presents an overview of the personal characteristics, competencies, and actions expected of S3s/XOs, highlighting general areas where difficulty has been identified. We used a combination of literature review and interviews with subject matter experts to understand organizational expectations of the S3/XO and to identify areas of difficulty. A list of the types of subject matter experts we interviewed is provided in Appendix A. If *S3-XO.net* is to have an impact on officer competence and professionalism, and, by extension, unit and organizational effectiveness, these areas should represent a significant proportion of the productive discussion and knowledge sharing occurring in the forum.

Requirements of the S3/XO

The S3/XO duty position is a critical point in an Army officer's career because the position that he assumes *after* being an S3/XO will set the tone for the rest of his career. That is, his performance as an S3/XO is a critical determinant of the Army's decision to select him for promotion and command. At this point in his career, the Army officer generally has decided to remain in the Army until retirement. In addition, the Army has invested in him, having chosen him to go to CGSC as preparation to become an S3/XO and then choosing him for a position that is a critical stepping-stone to command. Although the S3/XO does not have to juggle the demands of command and administration, as does the company commander, he must work extremely hard to compete with the other highly qualified S3s/XOs for limited command positions and continued upward mobility in the Army. The future S3s/XOs we interviewed

expressed that an S3/XO community that could help them save time and increase productivity, develop camaraderie, and seek advice or advise others would be highly desirable.

As field grade officers and leaders in the U.S. Army, S3s and XOs are expected to embody certain values and personal characteristics, demonstrate particular competencies, and execute specific actions. These values, competencies, and actions correspond to the Army's Be, Know, Do conceptualization of leadership [Field Manual (FM) 22-100; U.S. Department of the Army (DOA), 1999], and serve as the foundation for effective units and, ultimately, an effective organization. Participation in *S3-XO.net* has the potential to foster officer attitudes, capabilities, and skills that meet or exceed the expectations of unit commanders and the organizational Army not only through knowledge sharing but also through relationship building that fosters a sense of mutual trust, identification, and obligation within the professional community.

Values -Being

The Army values described in FM 22-100 are loyalty, duty, respect, selfless service, honor, integrity, and personal courage. Soldiers are expected to be loyal to the U.S. Constitution, to the nation's civilian leadership, to the Army, to the unit they serve, and to other Soldiers. They are to put the welfare of the nation, of the Army, and of other Soldiers ahead of their own. They are expected to fulfill their obligations to the best of their ability and to treat people in the manner in which they wish to be treated. They must live up to the Army values, making legal, moral, and ethical choices even in the face of fear, danger, or adversity. Adherence to these values constitutes an important aspect of Army professionalism--the conduct, aims, or qualities that characterize the professional leader.

Several environmental conditions currently threaten the level of professionalism achieved in the Army after the Vietnam War. One condition is the tension between post-modern relativism predominant in civilian culture and the objective professional ethic expected by the Army (Snider, Nagl, & Pfaff, 1999). A second condition is the challenge to the Army's and Soldiers' warfighting identity introduced by full-spectrum operations and the increased prevalence of unconventional attacks against national interests (e.g., computer hacking) that places civilian experts in roles of active national defense (Gray, 2001). Challenges to the unique purpose and legitimacy of the Army as the nation's warfighters, which serve as the basis of professionalism (Snider et al., 1999), threaten adherence to Army values, especially in a time when the objective professional ethic has come under question. Moreover, doctrine describes Army values, but knowing what these values are is not sufficient to make decisions that adhere to these values, particularly when a decision requires giving one value precedence over another (Patterson & Phipps, 2002). Increased ethnic and cultural diversity in the Army presents further challenges to maintaining an objective professional ethic and arriving at a unified approach to moral decision-making on the basis of an overview description of values.

Some recent reports suggest that adherence to Army values is problematic and has negative implications for retention and the quality of the retained force. For example, Bilafer (2001) claims that senior officers in the Army are failing to adhere to Army values and suggests that this failure to maintain rigorous standards for behavior is having negative effects on the morale of junior and intermediate officers, with troubling implications for retention, cynicism,

and careerism (see also Marlin, 1997; Wong, 2000). For each Army value, Bilafer (2001) presented stories illustrating the importance that some senior commanders have placed on self-promotion over good conduct. These stories feature absence of top-down loyalty, lack of care for Soldiers, including inadequate mentorship [see also Army Training and Leader Development Panel (ATLDP), 2003], inconsiderate behavior toward subordinates, including harassment and intimidation, and misrepresentation of unit readiness. Although this report is now more than four years old, it serves as an alert to the effects that threats to professionalism can have on leader behavior.

Another recent study (Patterson & Phipps, 2002) reports that the number of commissioned officers separated from the Army for ethical misconduct (as opposed to other causes) increased by 11% between 1992 and 2000, from 1.5% to 3.9% of all separations. This study likely underestimates the actual occurrence of ethical misconduct by Army officers because many instances of ethical misconduct may never come to light. In addition, the aftermath of recent (Abu Ghraib, Bagram) and historical (My Lai) ethical scandals suggests that ethical misconduct conducted by officers or approved by officers that does come to light may not necessarily result in separation of officers from the Army (though see "2 Officers Punished in 2003," 2005).

In contrast to these findings, Wong (2000) and the Operation Iraqi Freedom Mental Health Advisory Team (OIF MHAT, 2003) have both reported high levels of professional behavior or feelings of professionalism among officers even in the midst of grave job dissatisfaction and low morale. It is difficult to know without comprehensive study how pervasive unethical or unprofessional behavior in the Army is, let alone the impact that this behavior has on unit and organizational effectiveness. Assessing the "true" status of Army professionalism is difficult in part because Army professionalism is not necessarily well understood (Gray, 2001) or measured, particularly now as the Army's fundamental role is in the midst of change.

In any case, threats to organizational identity and individual responsibility--especially full-spectrum operations--are real and affect not only commissioned officers but the Soldiers they lead (Britt, 1998). The morale of Army Soldiers, particularly those serving in Operation Iraqi Freedom is quite low, with suicide rates among Soldiers higher than in any other recent conflict, including Vietnam (OIF MHAT, 2003). Moreover, it may be argued that in an organization with an objective professional ethic just one person who strays from that ethic just one time represents a significant threat to the moral fiber of the organization as a whole. Field grade officers therefore must be constantly mindful of their adherence to Army values and must also ensure that the Soldiers they lead are supported in their efforts to do the same.

Participation in an APF may help field grade officers defend against threats to professionalism through exposure to and bonding with colleagues in a professional setting. Such activity could expose officers to positive or even inspiring examples of professionalism, allowing social pressures to shape moral and ethical behavior. Similarly, such exposure may buttress the professionalism of those officers who experience a lack of professionalism in their unit and are concerned that it is typical of the Army as a whole. Sharing knowledge in the professional forum may also provide an opportunity for officers to collaboratively define the unique purpose and

legitimacy of their own roles in supporting their unit, especially where transformation and full-spectrum operations have required role re-definition. In order for participation in an APF to have this kind of benefit, discussion must address questions of professional identity, of values, and of ethical and moral leadership. Discussion must include stories and personal reflections, which are vehicles for sharing tacit knowledge necessary for successful leadership (Cianciolo, Antonakis, & Sternberg, 2004). To support the S3 and XO in specific, discussion must also address the personal characteristics staff officers are expected to embody.

FM 6-0 (DOA, 2003) identifies nine personal characteristics continually developed by effective staff officers: competent, proactive, creative, flexible, self-confident, loyal, team-oriented, effective manager, and effective communicator. Some of these personal characteristics overlap in obvious ways with Army values, but others are specified more in terms of the requirements of staff officers in particular. These are areas of special challenge for most staff officers, including the S3 and XO.

For example, the competent staff officer as described in FM 6-0 is familiar with his own and other staff officers' functional duties. He is also a team player who advises, consults and cooperates with other staff officers. However, staff officers at the battalion and brigade level have consistently shown difficulties with horizontally and vertically sharing information and integrating their efforts (CALL, 1998, 2003). The successful staff officer manages time and resources effectively, avoiding duplication of effort, but reinventing the wheel is generally recognized to be a common problem in the Army. Finally, the effective staff officer must be concise in his communications, writing concise orders and plans, staff studies, staff summaries, and reports. Staff officers have particular difficulty in this area, often failing to analyze information before briefing the commander. Challenges to efficient and effective communication will only increase as digital systems provide increased volumes of information to sift through (Langley, 2004; White, 2001).

Difficulties in these areas appear to stem from the perceived lack of time available for staff officers to perform immediate tasks while simultaneously establishing a foundation for the effective performance of future tasks. Moreover, the organizing principles that staff officers could use to increase efficiency (e.g., commander's intent, understanding of each other's roles; Cianciolo & Sanders, to appear; Olmstead, 1992) are often lacking. For the S3 and XO to be supported by community building and knowledge sharing, discussion must provide a means to save time but must also enable the S3/XO to (a) better conceptualize his role in the staff, in the command and control (C2) team, and in the unit; (b) increase his awareness of the interpersonal as well as technological means available to him to manage information effectively; (c) internalize his role as a leader and role model for his peers and subordinates, and (d) envision all situations as potential leverage for collective and personal success.

Competencies – Knowing

FM 22-100 (DOA, 1999) outlines four areas of leader competence--tactical, technical, conceptual, and interpersonal--which broadly characterize what a leader must know to lead successfully. Tactical competencies are the skills necessary to conduct operations and are enhanced by effective technical, conceptual, and interpersonal competence. Technical

competencies relate to the basic tasks and functions the officer must perform on the job. Conceptual competencies enable sound analysis, judgment, and decision-making. Interpersonal competencies are those competencies that enable the leader to exert his influence and ensure his will is carried out.

Tactical Competence. Tactical competence comprises warfighting capability and the synchronization/orchestration of friendly military and non-military assets to achieve decisive results on the battlefield. As staff officers, neither the S3 nor the XO has the command authority to employ units in combat under normal circumstances. Therefore, to demonstrate tactical competence staff officers must be proficient at synchronizing mission plans and operations. Synchronization is defined as “arranging activities in time, space, and purpose to mass maximum relative combat power at a decisive place and time” (FM 3-0, DOA, 2001). Aiding the commander in planning and executing missions by achieving synchronization is the fundamental tactical role of staff officers. It is the responsibility of the XO and S3 as leaders of the staff to ensure that the staff is trained and integrated such that they can synchronize their areas of interest effectively.

Synchronization involves knowing the capabilities and limitations of each battlefield operating system (BOS) at a particular time given a particular location, integrating the efforts of each BOS, and leveraging BOS capabilities to create a desired effect on the enemy or the environment. Fundamentally, synchronization is difficult because it requires staff officers to anticipate one another’s needs and communicate freely in a time-constrained environment with substantial personnel turnover, diverse experience levels, and considerable complexity (e.g., digital C2 systems, unpredictable enemy activity, transforming tactical roles). Moreover, the rapid everyday operational tempo experienced by staff officers can preclude the development of technical, conceptual, and interpersonal competence necessary for conducting collective tactical tasks as staff officers struggle just to keep up with day-to-day managerial demands. As the chief of staff, the XO must step back from immediate day-to-day activities and assess the staff’s collective capability, identify areas of strength and weakness, and train the staff to strengthen weak areas and maintain areas of strength. In addition, the XO must put standing operating procedures (SOPs) into place for how the staff as a collective will conduct mission planning and support the commander during execution, which will aid in team communication and information management. As the operations officer, the S3 must ensure that his day-to-day activity, such as conducting training and evaluating unit readiness, involves a systems approach in which unit readiness is conceptualized as the operational effectiveness of the combined assets available to the unit. The S3 also assists the commander in the execution of current and planning of future operations.

To support the development of tactical competence in the XO, then, knowledge sharing and discussion must provide a means for XOs to rapidly prepare staff readiness assessment and training plans and to quickly develop SOPs for mission planning and staff coordination during execution. Knowledge sharing and discussion must provide a means for XOs and S3s to more easily conceptualize operations as combined arms missions and to translate the conceptualization of combined arms missions into effective training plans. Both S3s and XOs may demonstrate increased tactical competence if knowledge sharing and discussion enabled them to understand and address the implications of diverse levels of experience in the staff, to rapidly form trusting

relationships with new staff officers, and to manage more effectively the demands of the complex operational environment.

Technical Competence. Technical competence comprises awareness and use of doctrine, technological exploitation, understanding of how diverse conditions affect unit readiness, and information management. Technical competencies particularly important to the S3/XO include leveraging digital C2 technology to aid in situational awareness and understanding and information dominance (Leibrecht, Lockaby, Perrault, & Meliza, 2004). Lacking technical competence in these areas has direct and indirect implications for tactical competence. Directly, technical competence enables the S3/XO to resource, allocate, exploit, and apply available digital C2 equipment for enhancing mission planning and tracking the progress of operations. Indirectly, technical competence enables the S3/XO to train the staff and subordinate officers on the digital skills required to act decisively in the area of operations.

Individual technical competence is particularly challenging to develop for multiple reasons, not the least of which are limited availability of systems on which to train, limited access to alternative digital training techniques, rapid rate of change in the capability of digital C2 systems, and assignment patterns that remove officers from operational units for several years at a time. Collective technical competence as developed by the S3/XO must address such factors as bandwidth constraints on what information can be shared when, stovepiped digital systems for each BOS (where access to digital systems is equivalent across BOSs, which is not always the case), differing versions of the same digital systems at different echelons, and asynchronous system upgrades across BOSs (Leibrecht et al., 2004).

Supporting the S3/XO in developing individual technical competence involves sharing knowledge as to what training is available for using the digital C2 systems that each staff officer must use to conduct planning and track operations, what tactics, techniques, and procedures (TTPs) have been used to leverage the capability of these systems, and what resources are available for better understanding the latest status of these systems and how they can be used to achieve information dominance. Supporting the S3/XO in developing collective technical competence in their units involves sharing digital SOPs, TTPs for addressing bandwidth and access constraints, and digital skills training techniques used in unit drills, among others.

Conceptual Competence. Conceptual competence is comprised of establishing with others one's intent, taking a systems perspective to understanding situations, reasoning critically, thinking creatively, thinking reflectively, adapting to changing circumstances, and predicting the second and third order effects of one's own actions on the environment. By the time officers become majors, they are expected, as a matter of course, to take initiative to identify and solve problems and learn from their experiences. They must develop novel solutions to difficult problems in an operational environment where the enemy is asymmetric and constantly modifies his tactics. They must respond quickly and adaptively to environmental changes, anticipating change where they can and thinking flexibly in unanticipated circumstances. Finally, they must empower their fellow officers to take their own initiative by making their intentions clear and developing conceptual competence in others. Conceptual competence enables S3s/XOs to oversee effectively the administrative and logistical support and training of their unit at a time when resources are extremely tight and the structure of the unit itself is changing. Conceptual

competence, through increased adaptability and innovation, also enables S3s/XOs to better support mission planning and staff integration at a time when many aspects of tactics are uncertain and the exact role of specific staff officers in supporting the planning process is uncertain.

The increased demand in the Army for such competencies as critical reasoning, creative thinking, and adaptive ability has not yet been accompanied by the cultural change necessary to allow junior officers the opportunity to develop these competencies (Wong, 2002). Emphasis has been placed in the schoolhouse on developing adaptive, innovative leaders and critical thinkers (e.g., Fischer, Spiker, & Reidel, 2000; Lussier & Shadrick, 2004), but lacking the opportunity to exercise them in the field, officers cannot retain new competencies developed in the schoolhouse. Although the war in Iraq has shifted tactical emphasis down to the company and platoon levels, providing junior officers unprecedented experience with innovative command decision-making, most current S3/XOs have assumed their duty position without having had this experience (Wong, 2004). As a result, many S3s/XOs must use their immediate experiences to gain conceptual competence.

Supporting the S3/XO in rapidly gaining conceptual competence from his immediate experiences must involve promoting the S3/XO's inclination to recognize and use his experiences and those of others as learning opportunities. This requires providing an environment in which the S3/XO (a) is encouraged to make explicit the situations in which he has worked, the problems he has identified, the solutions he has created, and their corresponding outcomes; (b) can safely discuss a problem he is facing with others who have faced similar problems in order to clarify his definition of the problem, identify a range of possible solutions, or seek feedback on his proposed solution; and (c) can rapidly access best practice in addressing problems similar to that which he is facing. Such an environment would facilitate resourcefulness, situated reflection, and learning orientation, which serve as a basis for conceptual competence (Cianciolo et al., 2004).

Interpersonal Competence. According to Horey, Fallesen, Morath, Cronin, et al. (2004), eight interpersonal competencies characterize the future Army leader. Three that have not already been addressed in previous sections are (1) vitalizing a positive climate; (2) arming self to lead; and (3) extending personal influence. Vitalizing a positive climate involves setting the conditions for positive attitudes and effective work behaviors. Arming self to lead is that activity the leader engages in to ensure he is prepared for challenges, aware of himself and his environment, and engaged in lifelong learning. Extending influence involves ensuring that one's influence goes beyond the direct lines of authority and chains of command. For the S3/XO, interpersonal competence means creating a climate in which staff actions are cohesive and integrated (Olmstead, 1992), where each staff officer knows and is empowered to perform his role on the team, where personality differences do not affect the functioning of the staff, and where each staff officer's effort is focused on collectively supporting the commander. Interpersonal competence also means the S3/XO must take the initiative to build a constructive relationship with the commander, fellow staff officers (including those at higher or lower echelons), the command sergeant major, and subordinates. These relationships must enable him to determine what is expected of him to lead the staff effectively, to identify his strengths and

weaknesses as they relate to leading in his current situation, and to understand the particular challenges to the effectiveness of his staff and unit.

The S3/XO's development or display of interpersonal competence can be difficult in units where the command climate is negative or apathetic, where the previous S3/XO has not left behind information useful for functioning within the unit, where there is a great deal of turnover of staff officers, where there are personnel shortages that reduce time available or staff capability, and where staff officers are inexperienced and unlikely to take initiative. Some combination of these conditions characterizes most units, especially high turnover rates, personnel shortages, and inexperienced staff officers.

Supporting the S3/XO in developing and/or demonstrating interpersonal competence requires that S3s/XOs have access to the officers who preceded them--to be able to discuss the peculiarities of the unit to which they have been assigned and to share methods for working effectively in the unit. S3s/XOs must also be exposed to opportunities to learn general methods for dealing with turnover (e.g., SOPs dealing with collective staff tasks, such as planning) and inexperienced staff officers (e.g., exercises or other techniques to foster initiative). Finally, the S3/XO must be aware of what worked or didn't work for others who dealt with difficult interpersonal situations, such as low morale, poor command climate, or times of high stress and/or workload. Storytelling is often an effective vehicle for sharing tacit knowledge about how to handle challenging interpersonal issues (Cianciolo, Matthew, Wagner, & Sternberg, in press).

Actions - Doing

FM 22-100 (DOA, 1999) outlines three broad categories of action in which successful field grade officers must demonstrate competence--influencing, operating, and improving. Influencing involves communicating effectively, leading by example, and moving beyond reactive activity to engage in anticipatory decision making. Operating involves effective mission planning, preparation, and execution, as well as objective information assessment. Improving involves engaging in self-development and lifelong learning, building successful teams, and promoting self-awareness. Several aspects of these competencies, such as synchronization, building staff integration and cohesion, and preparing oneself to lead, have been addressed previously and will not be addressed here. Only unique elements are discussed.

Influencing. Influencing involves exemplifying Army values and "warrior ethos," communicating effectively, and making effective decisions, all of which have been addressed in the preceding discussion.

Operating. In addition to synchronization during mission planning and execution, operating involves the gathering and analysis of information in order to understand its reliability, validity, and sources. It is important that information assessment be as unbiased and objective as possible. Both the S3 and XO must be able to make actionable recommendations to the commander on the basis of sound information about the threat and the environment. Recommendations must also be made on the basis of an accurate understanding of the friendly situation.

The assessment of information on the threat and the environment is particularly challenging in today's operational environment because there is a great deal more information being gathered by a greater diversity in sensory capability. This capability includes advanced sensing technology as well as the use of Soldiers and informants in the civilian populace as human intelligence gatherers. The primary threats to the reliability and validity of incoming information about the threat and the environment include (a) lack of information integration necessary to determine the true meaning and implications of intelligence data; and (b) uncertainty regarding the credibility of civilian informants. The primary threats to the reliability and validity of incoming information about the friendly situation include (a) incompleteness of information due to inadequate awareness of those reporting the information; and (b) misrepresentation of information (e.g., troop readiness status) due to lack of awareness or reporting of future projections rather than current status.

Discussion and knowledge sharing that supports the S3/XO in effectively assessing information should cover such topics as methods for integrating information coming from diverse sources, techniques for determining the credibility of civilian informants, and methods for ensuring that staff estimates and other information regarding friendly status are complete and/or accurate.

Improving. Improving involves developing a lifelong learning orientation, empowering subordinates to take on increased responsibility and initiative, and building cohesive teams, all of which have been addressed in the preceding discussion.

Member Competence and Professionalism – A Proposed Framework for Assessment

To assess the impact that *S3-XO.net* could potentially have on member competence and professionalism, a red-amber-green rating system analogous to the one used earlier in this report was used. The red-amber-green criteria for each aspect of member competence and professionalism are presented in the tables below. It is important to note that the below assessment criteria are recommended as a starting point and that several of the assessment criteria presented here must change as current issues evolve. In addition, these criteria may not be exhaustive or reflect the areas of greatest joint interest to the Army and *S3-XO.net* members. Finally, it should be noted that the proposed framework is for evaluating *potential* impact of the forum, rather than assessing impact directly. The assumption behind this approach is that (a) it is more feasible and more tractable to assess the potential for impact rather than impact directly; and (b) if direct impact is of particular interest, the proposed approach is useful for determining whether taking on such an effort would provide useful additional information.

Impact on Member Competence and Professionalism – Assessment of S3-XO.net

The impact of *S3-XO.net* on the competence and professionalism of its members was not formally assessed in the present investigation because status ratings of conversation, content, and connections were all red-amber. More specifically, conversation activity and quality both were assigned a red-amber status, participating members and facilitating connections among members were assigned a red status, and identifying experts was assigned an amber status. This suggests that what conversation was occurring was not of good quality and may likely not have been

among individuals of the target membership. Given these status ratings, it is unlikely that *S3-XO.net* could have a potential impact status greater than red or red-amber.

Formal analysis of impact can be expected to provide information above and beyond analysis of social and intellectual capital when status ratings of conversation, content, and connections are amber-green or green. Impact analysis at that point addresses whether the social and intellectual capital actively developed in the forum is in line with joint organizational/forum member needs. Direct assessment of impact addresses whether relevant social and intellectual capital development can overcome the cultural, logistical, administrative, or other challenges to effective individual performance.

Informal assessment of *S3-XO.net* indicates that several of the topics identified as relevant to having an impact on officer competence and professionalism are present in the forum, including, for example, leadership challenges in transformation, combined arms training in a unit of action, the military decision-making process in a collaborative unit, and so on. However, conversation tended to be quite sparse and stories were infrequently used to share tacit knowledge.

Impact on Member Competence and Professionalism - Recommendations

Our general-level recommendation for ensuring that conversation in the forum is relevant to joint Army and *S3-XO.net* member needs is to survey the available literature addressing issues currently challenging the organization, particularly as it relates to S3s/XOs, and to interview individuals who have keen insight into the issues facing S3s/XOs and the Army as a whole. Ideally facilitators in the forum are members of the professional community and have an organic sense of the issues, but in the case that they do not, it is essential to know what or who to target to generate useful information in the forum. Non-expert facilitators should have an expert advisor who helps them identify, anticipate, and address member needs.

Examples of literature or other documentation that may be helpful in identifying S3/XO needs include professional articles found in *Military Review*, which is targeted toward field grade officers, and CALL reports featuring combat training center trends, particularly as they relate to the battle staff. Many of the National Training Center assessment teams (e.g., Cobras, Broncos, etc.) have forums in AKO that post trends. These may be helpful resources. Occasionally, branch-specific professional publications, such as *Armor* magazine or *Field Artillery* magazine, will have articles addressing battalion staff issues. Up to date information about organizational initiatives released in the *Army News* or posted on organizational websites may provide useful information for anticipating S3/XO needs and prioritizing them for addressing in the forum (Captain Robert Thornton, personal communication). *Parameters* and documents produced by the Strategic Studies Institute at the U.S. Army War College provide insight into issues challenging the Army as an organization.

Fundamentally, the most important people to interview about what conversation and content on the forum will be most helpful to current and future S3s/XOs are current and future S3s/XOs. It can be quite difficult to win time from these individuals, especially current S3s/XOs, but of the people we interviewed, nearly all of them were enthusiastic about horizontal

Table 20. A Proposed Framework for Assessing Potential Impact on Officer Values, Personal Characteristics, and Professionalism (Be)

	Status		
	Red	Amber	Green
Professionalism of the Conversation	Incidents of unprofessional commentary (e.g., backbiting or personal attacks) appear in the forum at least once a day; Facilitators report devoting more than 5% of their time to monitoring for unprofessional posts; 50%- of member ratings of professionalism forum are high	Incidents of unprofessional commentary are relatively infrequent, once a month or less; Facilitators report devoting less than 5% of their time to monitoring for unprofessional posts; 50-85% of member ratings of professionalism in the forum are high	Unprofessional commentary does not occur; Facilitators report that they really don't need to monitor for unprofessional posts; 85%+ of member ratings of professionalism in the forum are high
Ethical/Moral Leadership	Conversation about challenges to ethical/moral decision making and what it means to be an ethical/moral leader is not present in the forum or is inactive or of poor quality (see Table 7); 30%- of members rate ethical/moral leadership discussion as informative	Conversation about challenges to ethical/moral decision making and what it means to be an ethical/moral leader is present in the forum, but the conversation is moderately active or of moderate quality (see Table 7); 30-60% of members rate ethical/moral leadership discussion as informative	Conversation about challenges to ethical/moral decision making and what it means to be an ethical/moral leader is present in the forum, is active and is of good quality (see Table 7); 60%+ of members rate ethical/moral leadership discussion as informative
Professional Identity	Conversation about the role of the S3/XO in a transforming/transformed unit and the implications of full-spectrum operations for Soldier's identity as warfighter is not present in the forum or is inactive or of poor quality (see Table 7); 40%- of members rate professional identity discussion as informative	Conversation about the role of the S3/XO in a transforming/transformed unit and the implications of full-spectrum operations for Soldier's identity as warfighter is present in the forum, but the conversation is moderately active or of moderate quality (see Table 7); 40-70% of members rate professional identity discussion as informative	Conversation about the role of the S3/XO in a transforming/transformed unit and the implications of full-spectrum operations for Soldier's identity as warfighter is present in the forum, is active and is of good quality (see Table 7); 70%+ of members rate professional identity discussion as informative
Personal Characteristics of the S3/XO	Conversation about what the personal characteristics of the S3/XO are and how to better embody these characteristics is not present in the forum or is inactive or of poor quality (see Table 7); 30%- of members rate personal characteristics discussion as informative	Conversation about what the personal characteristics of the S3/XO are and how to better embody these characteristics is present in the forum, but the conversation is moderately active or of moderate quality (see Table 7); 30-60% of members rate personal characteristics discussion as informative	Conversation about what the personal characteristics of the S3/XO are and how to better embody these characteristics is present in the forum, is active and is of good quality (see Table 7); 60%+ of members rate personal characteristics discussion as informative
Use of Stories	Stories are never or rarely used to share experiences related to embodying or instilling Army values, S3/XO characteristics, or professionalism	Stories are sometimes used to share experiences related to embodying or instilling Army values, S3/XO characteristics, or professionalism	Stories are commonly used to share experiences related to embodying or instilling Army values, S3/XO characteristics, or professionalism

Table 21. A Proposed Framework for Assessing Potential Impact on Officer Tactical, Technical, Conceptual, and Interpersonal Competence (Know)

	Status		
	Red	Amber	Green
Tactical Competence	Conversation about staff training, combined arms training, synchronization, and SOPs for planning and information management is not present in the forum or is inactive or of poor quality (see Table 7); 40%- of members rate tactical competence discussion as useful	Conversation about staff training, combined arms training, synchronization, and SOPs for planning and information management is present in the forum, but the conversation is moderately active or of moderate quality (see Table 7); 40-70% of members rate tactical competence discussion as useful	Conversation about staff training, combined arms training, synchronization, and SOPs for planning and information management is present in the forum, is active and is of good quality (see Table 7); 70%+ of members rate tactical competence discussion as useful
Technical Competence	Conversation about locating digital training and learning resources, leveraging digital capability, digital SOPs, and digital skills training techniques is not present in the forum or is inactive or of poor quality (see Table 7); 40%- of members rate technical competence discussion as useful	Conversation about locating digital training and learning resources, leveraging digital capability, digital SOPs, and digital skills training techniques is present in the forum, but the conversation is moderately active or of moderate quality (see Table 7); 40-70% of members rate technical competence discussion as useful	Conversation about locating digital training and learning resources, leveraging digital capability, digital SOPs, and digital skills training techniques is present in the forum, is active and is of good quality (see Table 7); 70%+ of members rate technical competence discussion as useful
Conceptual Competence	Conversation does not reflect officers engaging in reflection; The range of options for handling novel situations that are offered in conversation or otherwise available are not representative of the range of solutions actually tried by forum members; Stories are never or rarely used to share tacit knowledge; 40%- of members rate conceptual competence discussion as useful	Conversation reflects officers engaging in reflection with moderate frequency; The range of options for handling novel situations that are offered in conversation or otherwise available moderately represents the range of solutions actually tried by forum members; Stories are sometimes used to share tacit knowledge; 40-70% of members rate conceptual competence discussion as useful	Conversation reflects officers frequently engaging in reflection; The range of options for handling novel situations that are offered in conversation or otherwise available represents the range of solutions actually tried by forum members; Stories are often used to share tacit knowledge; 70%+ of members rate conceptual competence discussion as useful
Interpersonal Competence	Conversation about how to handle challenging interpersonal situations (e.g., low morale, poor command climate), how to build staff cohesion in the face of turnover and inexperience, and how to effectively manage captains and lieutenants is not present in the forum or is inactive or of poor quality (see Table 7); Stories are never or rarely used to share tacit knowledge; 50%- of members report having access to their predecessor through the forum; 40%- of members rate interpersonal competence discussion as useful	Conversation about how to handle challenging interpersonal situations, how to build staff cohesion in the face of turnover and inexperience, and how to effectively manage captains and lieutenants is present in the forum, but the conversation is moderately active or of moderate quality (see Table 7); Stories are sometimes used to share tacit knowledge; 50-80% of members report having access to their predecessor through the forum; 40-70% of members rate interpersonal competence discussion as useful	Conversation about how to handle challenging interpersonal situations, how to build staff cohesion in the face of turnover and inexperience, and how to effectively manage captains and lieutenants is present in the forum, is active and is of good quality (see Table 7); Stories are frequently used to share tacit knowledge; 80%+ of members report having access to their predecessor through the forum; 70%+ of members rate interpersonal competence discussion as useful

Table 22. A Proposed Framework for Assessing Potential Impact on Officer Influencing, Operating, and Improving Competence (Do)

	Status		
	Red	Amber	Green
Influencing	See Framework for Assessing Impact on Officer Values, Personal Characteristics and Professionalism (Table 20)		
Operating	Conversation about techniques for integrating incoming information, determining the credibility of civilian informants, and ensuring that staff estimates and reports from subordinates are complete and accurate is not present in the forum or is inactive or of poor quality (see Table 7); 40%- of members rate operating competence discussion as useful	Conversation about techniques for integrating incoming information, determining the credibility of civilian informants, and ensuring that staff estimates and reports from subordinates are complete and accurate is present in the forum, but the conversation is moderately active or of moderate quality (see Table 7); 40-70% of members rate operating competence discussion as useful	Conversation about techniques for integrating incoming information, determining the credibility of civilian informants, and ensuring that staff estimates and reports from subordinates are complete and accurate is present in the forum, is active and is of good quality (see Table 7); 70%+ of members rate operating competence discussion as useful
Improving	See Framework for Assessing Impact on Officer Tactical, Technical, Conceptual, and Interpersonal Competence (Table 21), specifically the criteria for evaluating impact on conceptual and interpersonal competence		

knowledge sharing with peers. They were generous with their time and provided very helpful insights. Additional people to approach about identifying needs include the authors of relevant articles found in the professional literature. Through their writing, these individuals have demonstrated their expertise and interest in particular topics, and willingness to spend time to bring these topics to the attention to others. These authors typically have a wealth of experience to draw on and easily can be located through AKO. Other insightful people include the observer/controllers at the Combat Training Centers and senior members of the community.

Locating individuals to discuss the needs of S3s/XOs simultaneously helps facilitators develop social capital, people they can rely on to answer a related question that comes up in the forum or to recommend individuals who have special insight into that question. The development of this social capital is especially important when facilitators are themselves not current or future S3s/XOs. In addition, if interaction between facilitators and interviewees is constructive, positive word about the forum is spread even though the activity was not part of a formal advertising campaign.

S3-XO.net Impact on Unit Effectiveness

As with managing the scope of individual-level impact assessment, it is important to manage the scope of unit-level impact assessment by targeting those aspects of unit effectiveness for which common or persistent problems have been identified. In addition, for a fair assessment of impact, "unit" must be defined in such a way that unit effectiveness can be directly influenced by the target membership of the APF whose impact is being assessed. Because the target membership of *S3-XO.net* is comprised of current and future S3s and XOs at the BN and BDE level, "unit" is here defined as the BN or BDE staff. Improvements in unit-level effectiveness should therefore address common or persistent problems identified in BN or BDE staff performance.

The same feasibility issues surrounding the assessment of direct impact on individual-level competence and professionalism also apply to using the quasi-experimental approach to assess directly unit-level impact. Here too, a reasonable proxy is to assess whether or not the content and discussion in *S3-XO.net* addresses the key problem areas in BN/BDE staff effectiveness. The social and intellectual capital assessment criteria as applied in the proposed framework for evaluating potential impact on individual-level effectiveness could be used to assess the potential impact of *S3-XO.net* on unit-level effectiveness in the targeted areas of interest.

The following section presents an overview of the role of the S3/XO on the BN/BDE staff, highlighting general areas where difficulty has been identified¹⁶. We used a combination of literature review and interviews with subject matter experts to understand the role of the S3/XO

¹⁶ The present overview is focused primarily on problems occurring during mission planning and execution. This focus reflects that of the available literature on staff performance, which comes from combat training center assessments and descriptions of combat lessons learned. A survey of the non-mission challenges faced by S3s/XOs and their implications for unit effectiveness would provide valuable information for evaluating the impact of *S3-XO.net*. However, the difficulty obtaining an understanding of non-mission challenges suggests that such challenges may be of less interest to organizational decision makers than mission-related challenges.

and to identify areas of difficulty. A list of the subject matter experts we interviewed is provided in Appendix A. If *S3-XO.net* is to have an impact on unit effectiveness and, by extension, organizational effectiveness, these areas should represent a significant proportion of the productive discussion and knowledge sharing occurring in the forum.

Requirements of the BN/BDE Staff

Ultimately, the staff must serve as an extension of the commander by being his eyes, ears, and voice in all matters of command, whether in garrison or theater [U.S. Army Infantry School (USAIS), 1937]. The purpose of the staff is to make the commander's authority known down the chain of command and to inform the commander's decision making through the supply of timely, relevant information (USAIS, 1937). Whereas the commander leads the unit, the staff manages the day-to-day activity of the unit, taking advantage of every opportunity to increase the efficiency of staff functioning (FM 6-0; DOA, 2003).

The XO is the leader of the staff, normally delegated executive management authority by the commander. He directs staff tasks, oversees staff coordination, and ensures efficient and prompt staff actions (FM 6-0). All coordinating staff officers (e.g., intelligence officer, operations officer, and logistics officer), special staff officers (e.g., engineering, fire support, etc.), and attachments are directly responsible to the XO (FM 6-0). He is responsible for staff training and subordinate unit readiness, and ensures that the staff functions as a collective and that their efforts are maximally coordinated with the commander's intent. He also maintains information flow between the commander and the rest of the staff. The XO must establish a close relationship with the commander, understanding how the commander's personal characteristics and command style influence his intent (FM 6-0).

The S3 is responsible for coordinating and overseeing unit training, operations and plans, and force development and modernization (FM 6-0). He must ensure that operations are conducted according to the commander's intent, which includes troop preparation, mission planning, and coordination of execution, among other responsibilities. Together with the commander he develops the mission essential task list, then he identifies the associated training requirements and conducts training to ensure that subordinate units meet these requirements. During operations, the S3 must work closely with the other coordinating and special staff officers in order to ensure that tactical operations are adequately resourced and synchronized. He fosters the development and modernization of the unit by recommending and maintaining a force structure that optimally balances resource allocation with mission requirements.

Key Challenges – The Entire Staff

Advise and Inform the Commander. In order to effectively advise and inform the commander, the staff must "provide relevant information to inform the commander's situational awareness/understanding and decision making" (FM 5-0; DOA, 2002). Staffs fairly reliably have difficulty providing an effective analysis of incoming information such that the implications or the "so what?" of the information for decision-making are clear (e.g., White, 2001). This difficulty arises particularly during staff planning (e.g., mission analysis) but also during mission execution. For example, recent observations from the National Training Center indicate that

staffs often fail to create a decision support template (DST) or decision support matrix (DSM) during mission planning. The DST/DSM specifies the “so what?” of information by linking the commander’s critical information requirements (CCIR) to points in time and space on the battlefield where intelligence must be gathered and a decision must be made. Moreover, staffs who do create a DST/DSM often fail to refer to it in order to filter incoming information and inform the commander in a timely manner that a decision is at hand.

Difficulty analyzing incoming data for their implications may stem from a variety of causes. Among the most common of these causes are ineffective battle rhythm in the tactical operations center (TOC) leading to fatigue and error, absent or ignored TOC SOPs for managing information, and failure to understand the commander’s intent. Shortfalls in these areas are particularly problematic in asymmetric warfare, where information dominance is a critical source of combat advantage (Kasales, 2002). The S3 and XO are both directly responsible for ensuring that information management during planning and execution runs smoothly and supports the commander’s decision making.

Prepare Plans and Orders. The preparation of plans and orders involves executing the military decision-making process (MDMP). Staffs have had difficulty executing the MDMP for decades. These difficulties include managing time during the planning process, conducting effective mission analysis (e.g., identifying enemy decision points), fully developing a course(s) of action, conducting an effective war-game, and producing a synchronized plan (e.g., CALL, 1996, 1997, 1998, 2003). The challenge to effectively apply the MDMP has only increased as units face an asymmetric enemy. Specifically, the latest trends from the National Training Center indicate that staffs treat new methods for targeting operational efforts (e.g., effects-based operations) as separate from the MDMP and therefore discard the MDMP. Limitations in understanding how the MDMP applies in conventional warfare are preventing the application of the MDMP to planning counterinsurgency operations and stability and support operations. In addition, staffs often take too much time to plan, failing to allow subordinate units enough time to plan their own missions.

Some causes of difficulty in applying the MDMP include ineffective battle rhythm in the TOC leading to fatigue and error, inadequate staff training, unfamiliarity with doctrine, poor integration or cohesion within the staff, absent or ineffective planning SOPs, and failure to understand the commander’s intent (and to seek guidance when his intent is vague). The XO is in charge of training and coordinating the staff (FM 6-0; DOA, 2003). He must set a planning timeline and ensure that the timeline is adhered to (Pleban, Thompson, & Valentine, 1993). He must also oversee the planning process, ensuring that his planning SOPs are put into action and that staff efforts are integrated and aligned with the commander’s intent. This requires a close relationship with the commander and proactive personnel management, with particular attention to the tendency for certain staff officers (e.g., the S4, forward support battalion support operations officer) to be excluded from the planning process (Wilson & Snow, 2003). The S3 must take a systems approach to planning and execution, visualizing and understanding the importance of the contribution of each BOS to achieving decisive effects.

Manage Information Within Own Field of Interest. Information management is an especially difficult task for battle staffs, particularly as it relates to understanding the CCIR and

their implications for developing the intelligence collection plan, analyzing incoming information to determine its relevance to the CCIR and the commander's decision making, and disseminating information in order to answer the CCIR. This task becomes even more challenging during stability and support operations conducted within the province of an asymmetric enemy because intelligence collection operations involve everyone in the unit (i.e., as opposed to involving only a scout platoon or brigade military intelligence assets). This increase in number of Soldiers collecting information, combined with digital situational awareness technology, dramatically increases the amount of information entering the TOC. In order to sift through large amounts of incoming information, staff officers must know and communicate what they are looking for, who they expect to provide the information, and the time by which they must have the information they seek.

Some possible causes for difficulty with managing information include failure to understand the commander's intent, lack of planning and/or TOC SOPs, lack of integration among the S3 and the intelligence officer, and fatigue or lack of time available in the TOC (due to ineffective time management or inadequate battle rhythm). As stated previously, the S3 and XO are both directly responsible for ensuring that information management during planning and execution runs smoothly and supports the commander's decision making. The XO must lead information-management by making clear the commander's intent and initial information needs, ensuring that the staff thoroughly identifies the commander's additional information needs, and establishing/implementing the SOPs for managing information in the TOC during mission execution. The S3 aids in the information analysis effort by effectively representing the commander's concept of operations and coordinating with the intelligence officer during mission planning.

Perform Staff Coordination. Staff integration has eluded battle staffs for decades (e.g., Grossman, 1994; Olmstead, 1992). That is, staff officers generally do not share information with one another during the planning process, do not understand and anticipate each others' needs, and do not coordinate with one another when developing components of the mission plan. The lack of integration among staff officers has deleterious effects on the quality of planning products--not only the plan itself, but also such products as the synchronization matrix and decision support matrix. A plan that is not synchronized will likely be ineffective, but could also be dangerous, for example through increased risk of fratricide. In addition, difficulty with staff integration not only occurs within the staff of a particular unit, but also between the staffs of superior and subordinate (e.g., BDE and BN) units.

There are several potential causes of inadequate staff integration, including a rapid rate of turnover within the staff team, lack of clarity regarding the commander's intent for individual staff roles (e.g., XO vs. S3), lack of awareness regarding the doctrinal roles and information requirements of each staff officer (including oneself, Cianciolo & Sanders, to appear), underestimation of the importance of each staff officer, and interpersonal conflict.

Challenges – XO

The following duties/responsibilities (FM 6-0; DOA, 2003) are especially challenging for the XO:

- Integrate and synchronize plans and orders
- Supervise management of the CCIR
- Establish, manage, and enforce the staff planning timeline
- Conducting staff training
- Ensuring staff work conforms to the mission, commander's guidance, and time available
- Ensuring the staff integrates and coordinates its activities internally and with higher, subordinate, supporting, supported, and adjacent commands
- Ensuring all staff sections participate in and provide functional expertise to intelligence preparation of the battlefield
- Directing and supervising staff planning
- Supervising intelligence, surveillance, and reconnaissance (ISR) integration

There are several factors that create difficulty in accomplishing the above listed duties/responsibilities, including turnover within the staff, inexperienced staff officers who lack initiative, ineffective time management by the next higher staff, distractions during the planning process (e.g., the XO is pulled away from the planning process to handle a logistics problem), tactical ambiguity arising from significant unit reorganization, interpersonal conflict within the staff, and environmental and cultural pressures to stovepipe staff officer knowledge and activity. Through effective leadership and the use of such tools as SOPs, graphical timelines, and staff training TTPs, the XO is expected to deal with these factors to run an effective staff. Because the XO is the leader of the staff, his effectiveness translates into the effectiveness of the staff as a whole. Shortfalls in accomplishing the duties/responsibilities listed above readily can be seen in the challenges faced by the staff as a whole described in the previous section.

Challenges – S3

The following duties/responsibilities (FM 6-0, DOA, 2003) are especially challenging for the S3:

Training

- Conducting training within the command
- Preparing training guidance for the commander's approval
- Helping the commander develop the unit's mission essential task list (METL)
- Identifying training requirements, based on the unit METL and training status
- Determining requirements for and allocation of training resources

Plans and Operations

- Synchronizing tactical operations with all staff sections
- Reviewing plans and orders for synchronization and completeness
- Ensuring necessary combat support requirements are provided when and where required
- Integrating ISR into the concept of operations
- Integrating and managing the ISR effort through an integrated staff process and procedure
- Developing the ISR plan (with the rest of the staff)

- Synchronizing ISR with the overall operation throughout the operations process (with the rest of the staff).
- Integrating fire support into operations
- Determining combat service support resource requirements (with the personnel and logistics officer).
- Participating in course of action and decision support template development (with the intelligence officer and fire support coordinator).

Force Development and Modernization

- Processing procedures for unit activation, inactivation, establishment, discontinuance, and reorganization (force accounting)
- Evaluating the organizational structure, functions, and workload of military and civilian personnel to ensure their proper use and requirements (manpower utilization and requirements)
- Developing and revising unit force data for documenting any changes to the modification table of organization and equipment (MTOE) and modification table of distribution and allowances (MTDA)
- Conducting formal, on-site manpower and equipment surveys
- Ensuring MTOE and MTDA documents reflect the minimum essential and most economical equipment needed for the assigned mission
- Determining qualitative and quantitative personnel requirements for new equipment and systems

Unit training is a major challenge for the S3, due to equipment shortages to conduct training, shortages of NCOs to assist in training, and lack of doctrinal guidance to deal with the training implications of force reorganization and digitization. The major challenge to conducting plans and operations for the S3 is coordinating with the other staff officers in order to develop and execute a unified plan. The importance of combat service and combat service support to mission success tends to be underestimated, and as a result several coordinating and special staff officers are left out of the planning process. During mission execution, when the main command post or TOC and the combat trains command post are geographically distributed, staff integration becomes much more difficult. Dramatic and rapid changes in the structure and organization of the Army present significant challenges to the S3 to handle force development and modernization. Doctrine has not yet been developed to support decision-making regarding balancing personnel and resource allocation with mission requirements. In addition, the scale of the changes in unit structure (i.e., installation-wide implications) makes oversight of force accounting difficult because a great deal of change is occurring at one time. Finally, the new BN S3 is relatively inexperienced, having not learned much about the day-to-day demands of his job from previous duty positions or in the schoolhouse. The S3, however, usually outranks the other officers of the staff, except the XO, and is expected to bring leadership to his job duties.

Unit Effectiveness – A Proposed Framework for Assessment

To assess the impact that *S3-XO.net* could potentially have on unit effectiveness, a red-amber-green rating system analogous to the one used earlier in this report was used. The red-amber-green criteria for each aspect of unit effectiveness are presented in the table below. It is important to note that the assessment criteria presented below are recommended as a starting

point and that several of the assessment criteria presented here must change as current issues evolve. In addition, these criteria may not be exhaustive or reflect the areas of greatest joint interest to the Army and *S3-XO.net* members. Finally, it should be noted that the proposed framework is for evaluating *potential* impact of the forum, rather than assessing impact directly. The assumption behind this approach is that (a) it is more feasible and more tractable to assess the potential for impact rather than impact directly; and (b) if direct impact is of particular interest, the proposed approach is useful for determining whether taking on such an effort would provide useful additional information.

Unit Effectiveness – Assessment of S3-XO.net

The impact of *S3-XO.net* on BN/BDE staff effectiveness was not formally assessed in the present investigation in part because status ratings of conversation, content, and connections were all red-amber. Given these status ratings, it was unlikely that *S3-XO.net* could have a potential impact status greater than red or red-amber. In addition, in the previous section, it was determined that *S3-XO.net* likely has not yet achieved significant individual-level impact. Individual-level impact is necessary for unit-level impact to be achieved. Informal assessment of *S3-XO.net* indicated that some of the topics identified as relevant to having an impact on unit effectiveness were present in the forum, including, for example, S3 battle rhythm, TOC operations, MDMP training, and so on. However, conversation on these topics tended to be quite sparse.

Formal analysis of impact can be expected to provide information above and beyond analysis of social and intellectual capital when status ratings of conversation, content, and connections are amber-green or green and substantial impact on the individual-level has been determined. Impact analysis at that point addresses whether social and intellectual capital actively developed in the forum can address recognized shortfalls in unit effectiveness and whether improvements in forum member competence and professionalism generate improvements in unit effectiveness. Direct assessment of impact addresses whether relevant social and intellectual capital development and the enhancement of individual competence can overcome the cultural, logistical, administrative, or other challenges to effective unit performance.

Unit Effectiveness – Recommendations

Our recommendations for generating discussion and knowledge sharing that will have a greater impact on unit effectiveness are the same as the recommendations for enhancing impact on member competence and professionalism. If the facilitators are not themselves current members of the target membership, then they must otherwise become intimately familiar with the needs and interests of the members and organization they are serving.

S3-XO.net Impact on Army Effectiveness

Managing the scope of organization-level impact assessment requires targeting those aspects of organizational effectiveness that present common or current challenges to the target members of the APF to be assessed. As a counterexample, one issue the Army currently faces is

Table 23. A Proposed Framework for Assessing Potential Impact on Unit Effectiveness

	Status		
	Red	Amber	Green
Advise & Inform the Commander	Discussion and methods to better advise and inform the commander (e.g., TOC battle rhythm, TOC SOPs, understanding or clarifying CDR intent, etc.) are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate advise and inform the commander exchange as useful	Discussion and methods to better advise and inform the commander are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate advise and inform the commander exchange as useful	Discussion and methods to better advise and inform the commander are present in the forum, are active and are of good quality; 70%+ of members rate advise and inform the commander exchange as useful
Prepare Plans & Orders	Discussion and methods to better prepare plans and orders (e.g., conducting staff training, planning SOPs, improving cohesion, etc.) are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate prepare plans and orders exchange as useful	Discussion and methods to better prepare plans and orders are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate prepare plans and orders exchange as useful	Discussion and methods to better prepare plans and orders are present in the forum, are active and are of good quality; 70%+ of members rate prepare plans and orders exchange as useful
Manage Information	Discussion and methods to better manage information (e.g., integrating S2/S3, TOC SOPs, understanding or clarifying CDR intent, etc.) are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate information management exchange as useful	Discussion and methods to better manage information are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate information management exchange as useful	Discussion and methods to better manage information are present in the forum, are active and are of good quality; 70%+ of members rate information management exchange as useful
Perform Staff Coordination	Discussion and methods to better perform staff coordination (e.g., compensating for turnover, clarifying role of S3 vice XO, etc.) are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate perform staff coordination exchange as useful	Discussion and methods to better perform staff coordination are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate perform staff coordination exchange as useful	Discussion and methods to better perform staff coordination are present in the forum, are active and are of good quality; 70%+ of members rate staff coordination exchange as useful
Challenges - XO	Discussion and methods to better address XO challenges (e.g., supervising CCIR management, supervising ISR integration, ensure staff coordination) are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate XO challenges exchange as useful	Discussion and methods to better address XO challenges are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate XO challenges exchange as useful	Discussion and methods to better address XO challenges are present in the forum, are active and are of good quality; 70%+ of members rate XO challenges exchange as useful
Challenges - S3	Discussion and methods to better address S3 challenges (e.g., preparing training guidance, force modernization) are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate S3 challenges exchange as useful	Discussion and methods to better address S3 challenges are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate S3 challenges exchange as useful	Discussion and methods to better address S3 challenges are present in the forum, are active and are of good quality; 70%+ of members rate S3 challenges exchange as useful

Table 24. A Proposed Framework for Assessing Potential Impact on Army Effectiveness

	Status		
	Red	Amber	Green
Transformation-ISR in the BCT	Discussion and methods for conducting ISR in the BCT are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate conducting ISR in the BCT exchange as useful	Discussion and methods for conducting ISR in the BCT are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate conducting ISR in the BCT exchange as useful	Discussion and methods to better advise and inform the commander are present in the forum, are active and are of good quality; 70%+ of members rate conducting ISR in the BCT exchange as useful
Transformation-Fires, Targeting, and Effects	Discussion and methods to integrate fires, targeting, and effects are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate fires, targeting, and effects exchange as useful	Discussion and methods to integrate fires, targeting, and effects are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate fires, targeting, and effects exchange as useful	Discussion and methods to integrate fires, targeting, and effects are present in the forum, are active and are of good quality; 70%+ of members rate fires, targeting, and effects exchange as useful
Transformation-Brigade Troops Battalion	Discussion and methods to better lead/manage the BTB are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate BTB-related exchange as useful	Discussion and methods to better lead/manage the BTB are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate BTB-related exchange as useful	Discussion and methods to better lead/manage the BTB are present in the forum, are active and are of good quality; 70%+ of members rate BTB-related exchange as useful
Digitization-Maintaining Connectivity	Discussion and methods to better maintain connectivity are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate maintaining connectivity exchange as useful	Discussion and methods to better maintain connectivity are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate maintaining connectivity exchange as useful	Discussion and methods to better maintain connectivity are present in the forum, are active and are of good quality; 70%+ of members rate maintaining connectivity exchange as useful
Digitization-Digital Skills Training & Maintenance	Discussion and methods to better address digital skills training and maintenance are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate digital skills training and maintenance exchange as useful	Discussion and methods to better address digital skills training and maintenance are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate digital skills training and maintenance exchange as useful	Discussion and methods to better address digital skills training and maintenance are present in the forum, are active and are of good quality; 70%+ of members rate digital skills training and maintenance exchange as useful
Digitization-Information Overload	Discussion and methods to better address information overload are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate information overload exchange as useful	Discussion and methods to better address information overload are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate information overload exchange as useful	Discussion and methods to better address information overload are present in the forum, are active and are of good quality; 70%+ of members rate information overload exchange as useful
Digitization-Asynchronous Digitization	Discussion and methods to better address asynchronous digitization are not present in the forum or are inactive or of poor quality (see Table 7); 40%- of members rate asynchronous digitization exchange as useful	Discussion and methods to better address asynchronous digitization are present in the forum, but the exchange is moderately active or of moderate quality; 40-70% of members rate asynchronous digitization exchange as useful	Discussion and methods to better address asynchronous digitization are present in the forum, are active and are of good quality; 70%+ of members rate asynchronous digitization exchange as useful

meeting recruiting quotas. Although, in theory, participation in an APF may address recruiting challenges (e.g., recruiters could use such an APF to exchange techniques for “getting to yes” or for locating candidates likely to enlist), participation in an APF geared towards BN/BDE S3s/XOs likely will not. Because the target membership of *S3-XO.net* is comprised of current and future S3s and XOs of BN/BDE staffs, improvements in organization-level effectiveness should therefore address organizational issues that relate to management and performance at the BN/BDE echelons.

Feasibility issues make using the quasi-experimental approach undesirable for assessing organization-level impact unless there is definitive evidence suggesting that such an assessment would provide additional information beyond a more feasible approach. It is sensible to use a review of the content and discussion in the forum as a proxy for direct impact assessment before moving on to more complicated and costly assessment. The following section presents a brief overview of selected Army-wide initiatives and their implications for the jobs of the BN/BDE S3 and XO. We highlight areas of particular challenge using our findings from a combination of literature review and interviews with subject matter experts (see Appendix A for a list of the subject matter experts we interviewed). If *S3-XO.net* is to have an impact on organizational effectiveness these areas should represent a significant proportion of the productive discussion and knowledge sharing occurring in the forum.

The Battalion, The Brigade, and Organizational Initiatives

Identifying the organization-wide impact of activity in a single APF is exceedingly difficult for the reasons described at the beginning of this report. It should be possible, however, to articulate what affect on organizational excellence that more widespread knowledge management (KM) practices can be expected to have. It is one thing to say that KM will make the Army more effective and another to articulate how this is to occur and what “effective” means. An ongoing analysis of BCKS¹⁷, conducted by researchers at the Institute for Defense Analysis, has listed four ways in which the Army KM initiative is expected to influence organizational excellence. These are the operational goals of BCKS. Three of these goals will be discussed briefly below because of their applicability to APFs in particular.

The first means by which KM is expected to improve organizational effectiveness is through enhanced learning. Through KM, leader development will be enhanced by increased access to learning content, greater opportunity to repeat the practice of critical skills and competencies, and more opportunities to receive performance feedback. Second, KM is expected to result in increased leader ability to make intuitive decisions. Increased opportunity to practice skills and competencies with expert feedback using a wider variety of environmental conditions is expected to help leaders improve their pattern recognition and responses to complex situations. Third, KM is expected to result in the development of more adaptive leaders. Leaders’ ability to recognize novel situations and respond effectively will be increased through access to knowledge and discussion that will aid in understanding the current situation and its implications.

The above-described operational goals for BCKS represent high-level goals for *S3-XO.net*. The key challenges faced by S3s/XOs discussed previously may be addressed by

¹⁷ Recall that *S3-XO.net* is a part of Leader Network, a component of BCKS.

meeting the goals of enhanced learning and more adaptive decision-making, among the development of other skills, competencies, and attitudes. Further articulation of the expected organizational impact of *S3-XO.net* requires identifying the organizational initiatives that enhanced S3/XO functioning may facilitate. The tremendous amount of flux in the Army as it transforms to the Future Force has direct implications for the leadership and management of BDEs and BNs because these units are significantly affected by the transformation effort. Below, two key aspects of Army transformation and their implications for the S3/XO are briefly described. The general means by which enhanced S3/XO functioning may facilitate transformation are also presented.

Modularity

Modularity is the process of transforming current Army structure into a modular force. The overarching goal of modularity is to allow combatant commanders more flexible use of land power to address a full spectrum of operations through the adaptive selection of brigade “modules” or brigade combat teams (BCTs) to meet mission requirements (Smith, 2005). Simply put, modularity is changing the structure of the Army brigade such that it has organic combined arms capability, to include maneuver, intelligence, logistics, and signal, among other functions. BCTs, for example the Stryker brigade combat team (SBCT), will be standardized in their structure and in their SOPs such that the units are interchangeable and rapidly deployable. Additional multi-functional support brigade “modules” (e.g., aviation, fires, and sustainment), with standardized component “packages,” will also be available to the combatant commander in order to task organize BCTs to meet mission requirements.

Modularity reduces the need for combatant commanders to task organize brigades with combined arms assets. It also introduces new types of units, such as the maneuver enhancement brigade and the brigade troops battalion, which integrate forces that were once separate. In the modular force, two types of Unit of Employment (UE), UEx and UEy, will replace the division and corps echelons. The UE echelons will not have a set structure, but will be assembled flexibly on the basis of mission requirements and unit readiness.

The major implications of modularity for the S3 and XO include significant changes in personnel procedures, equipment, and employment tactics and associated leader and staff training requirements (Delaney, 2004). Moreover, because of the additional organic assets in the BCT, the structure and duties of the BCT staff (which is analogous to a division staff; Glenister, 2002) have increased in scope at the same time that tactics are also changing due to new types of units or modified unit structures. Modularity represents the greatest shift in force structure since the 1960’s (Smith, 2005), and is in some form of progress at installations nationwide. Some more specific implications of changes to the current force for the job of the S3 and XO are described below. The discussion below is not complete because such a discussion is beyond the scope of this short-term project, but it is meant to illustrate the nature of challenges that transformation presents to the S3/XO and how improving S3/XO capability facilitates this Army-wide initiative.

ISR in the BCT. Two types of BCT, the SBCT and the infantry BCT, feature a reconnaissance, surveillance, and target acquisition (RSTA) squadron (Smith, 2005). This organic ISR capability in one sense eases ISR planning by the BCT staff because such planning

is now handled by the RSTA squadron commander and staff (Kasales & Gray, 2003). However, close coordination must occur between the BCT S3 and RSTA squadron staff such that the ISR plan is maximally integrated with the brigade maneuver effort. Moreover, the RSTA squadron is not the only contributor to the BCT ISR effort, but is complemented by the BCT intelligence officer, a military intelligence (MI) company, and infantry battalion MI assets (Toomey, 2003). The BCT S3 must know how to coordinate these resources such that the ISR plan supports the BCT maneuver effort and that the information collected is timely and relevant (Kasales & Gray, 2003) -- a task that was already difficult with reduced complexity. In the absence of well-defined tactics for employment, the RSTA squadron S3 must fully understand the capabilities of the range of assets available to the squadron commander (i.e., human intelligence, tactical unmanned aerial vehicles, ground surveillance radar, reconnaissance squadrons, radio intercept, Fox nuclear, biological, and chemical vehicles) and how they are best integrated to meet the squadron and BCT mission requirements. Integration of staff efforts across echelons is an additional training challenge for both the BCT and RSTA squadron XO.

Fires, Targeting, and Effects. Asymmetric warfare in an urban environment has two broad implications for the use of fires and targeting. First, the built-up nature of the urban environment places limitations on what fires assets can be used such that unnecessary casualties and destruction to infrastructure are minimized. Second, the "battlefield" on which the asymmetric enemy conducts warfare is socio-political, where the trust and cooperation of the local populace (and other key stakeholders) serves as "key terrain;" decisive victory requires not annihilation of the enemy but obviation of the enemy through the effective targeting and denial of this key terrain to the enemy (Cianciolo & DeWillie, 2004).

The Army has responded to the need for effects-based targeting in part by designing the fires and effects coordination cell (FECC), which is responsible for coordinating efforts to achieve lethal and non-lethal effects on the enemy (Glenister, 2002). The FECC is situated within the headquarters of the BCT, serving as the engine that drives lethal and non-lethal targeting for the unit, planning and executing fires and effects tasks in collaboration with the other BOSs (FMI 3-09.42; DOA, 2005). It is an organic, standing organization with information operations capabilities, which differentiates it from the traditional brigade fire support element (FMI 3-09.42; Glenister, 2002). The field artillery battalion organic to the BCT supplies the effects coordinator who directs the FECC. The information operations section of the FECC is comprised of personnel from information operations, civil affairs, electronic warfare, and psychological operations. The FECC provides direction to the field artillery battalion's efforts to support the BCT.

The introduction of the FECC requires that field artillery battalion commanders and staffs address the task of fires and effects task coordination (Glenister, 2002). The field artillery battalion S3 must coordinate closely with the BCT FECC and the field artillery brigade headquarters such that the battalion does not become overtaxed by close support, shaping, and counterstrike responsibilities (FMI 3-09.42). This S3 must also ensure that his unit is trained to effectively execute coordinated fires and effects tasks as the FECC and battalion commander direct. The BCT S3 must have a solid understanding of how coordinated fires and effects tasks will support the maneuver effort. The persistent challenge to S3s to coordinate maneuver with fire support becomes more difficult as "overlapping fires" and "clearing effects" take on new

meanings when attempting to achieve social or political effects on the civilian populace (Hamilton & Gist, 2004). The increased complexity of the staff amplifies the challenge to the BCT XO to train and synchronize the staff effectively. S3s and XOs are not fully supported by doctrine in their effort to adapt to and exploit the FECC. Interim doctrine exists [FMI (Field Manual Interim) 3-09.42; DOA, 2005], but it is not fully consistent with or applicable to the tactics, techniques, and procedures adopted in practice and described in the professional literature (Glenister, 2002; Hamilton & Gist, 2004). In addition, the interim doctrine appears to confound achieving effects with performing tasks, a confound that is counterproductive and widely adopted.

New Units – The Brigade Troops Battalion. The brigade troops battalion (BTB) is organic to certain types of BCT (e.g., the heavy BCT). Its C2 cell (commander and staff) provides a centralized means for coordinating and supporting what were once separate companies and detachments typically attached to a traditional brigade (FMI 3-90.61; DOA, 2005). The BTB is comprised of four organic units [BTB headquarters and headquarters company (HHC), BCT HHC, a military intelligence company, and a signal network support company], and may have one or more attached elements, including civil affairs teams, psychological operations, public affairs, and specialized engineer teams, among others (FMI 3-90.61). Its general mission is to support the BCT staff during planning, to carry out and support BCT-designated tasks, to support the BCT's command posts and subordinate units, and to provide rear area and base security (FM 3-90.61).

Over the next two to three years, the commanders, XOs, and S3s of the BTB will come from engineering battalions that have been disbanded. The challenge to the BTB XO to train and coordinate a staff representing multiple functional areas is not a new one, though effective coordination of the particular specialties present in the BTB requires learning of unfamiliar functional areas. The S3 must also learn about these unfamiliar functional areas in order to effectively (a) identify the training needs of each type of unit and of the BTB overall; (b) provide this training; and (c) plan and support the coordinated efforts of these units. That the combat engineering battalion is being largely removed from the force structure is a sore point for several Army engineers. Some engineering S3s and XOs assuming a duty position in a BTB may also have to strive to succeed despite low morale or frustration with changes beyond their control.

Digitization

Digitization is the process of enabling battlefield visualization, collaborative mission planning, and information sharing via networked computer systems (Barnett, Meliza, & McCluskey, 2001). Digitized tactical operations centers feature digital situation awareness displays in place of maps and overlays. The digitized staff plans missions from distributed locations on the battlefield in parallel with higher and lower echelon staffs. They create and disseminate orders electronically. As is the case with all technological developments, digitization addresses some past challenges and also creates some new challenges, including new equipment that must be understood, staffed, and maintained, new skills that must be learned, new coordination that must be established, new doctrine and tactics that must be developed and learned, and so on (Barnett et al., 2001). All of these challenges have implications for the S3 and XO. Some of these implications are summarized below.

Maintaining Connectivity. Maintaining connectivity throughout an engagement is a difficult task made more difficult by digitization. The BN and BDE staff must plan the location of retransmission vehicles very carefully such that they are positioned to support communications among and between echelons that use radio systems with different planning ranges and with different roles during the engagement (Cotter, 2002). Digital transmission via Near-Term Digital Radio is required to keep digital BN and BDE TOCs from reverting back to analog. However, Frequency Modulation and Enhanced Position Location Reporting System radios are required for companies to communicate with each other and with their parent BNs. The need to support collaborative planning, battle tracking, and information dissemination at the BN and BDE level may conflict with the need for companies to communicate with their parent BNs using FM radio during the close fight, especially when retransmission resources are limited or reduced by enemy action (Cotter, 2002). The BN and BDE XO must ensure that their signal officer is integrated into the planning process such that retransmission needs are resourced and retransmission vehicles are effectively positioned in time and space during an engagement while also secured from enemy interference or attack.

Digital Skills Training and Maintenance. In addition to maintaining connectivity and performing basic manipulations of the interface, users of digital C2 equipment must exploit the capabilities of the technology such that using it is not tantamount to doing the same thing with a different method. The use of digital C2 equipment should result in fundamentally doing things differently. It requires expertise to diagnose and correct the instability of the tactical Internet, expertise that is not resident in most Soldiers. For these reasons, it is critical that the S3 and XO identify and train individual and collective digital skills, but they must do so in the relative absence of doctrinal or other support for performance assessment and feedback (though see Leibrecht et al., 2004). Moreover, digital skills are highly perishable, so S3s/XOs must be creative in determining means by which these skills can be practiced, such as through integrated use of the Army Battle Command System (ABCS) to do garrison tasks (e.g., to monitor garrison activities such as training (Brown & Dedrich, 2003; Kasales & Gray, 2003). The S3/XO must also establish digital SOPs to address information management, choices about what information is sent when due to bandwidth constraints and limited satellite time and/or digital gateways for satellite information (Kasales & Gray, 2003; Toomey, 2003).

Information Overload. The significant increase in information made available to the staff can either help or hinder their battle tracking and support of the commander's decision-making, depending on how information is processed and managed in the tactical operations center. Too much information is as much or more of a problem as too little. For example, the ability to cut and paste information, including pictures and graphics, from digital displays enables staffs to produce longer and longer orders, briefs, and other products which are not necessarily more informative (Langley, 2004). Moreover, larger files consume more bandwidth, thus slowing down not only information processing on the part of the recipient but also the transmission of the file itself (Langley, 2004). The analysts with the skills required to process the large volume of information produced by digital systems are often not available at the battalion level (Langley, 2004), so the BN XO must ensure that some other means is in place to manage information coming into and leaving the TOC. The previously described challenges to the XO and S3 to manage information effectively apply to handling information overload in the digital TOC.

Asynchronous Digitization. For obvious reasons, digitization cannot occur throughout the Army all at one time. The result is that some units are digitized ahead of others. In addition, the command and control systems of joint forces likely will not have compatible computer networks. The implication is that units fighting together may not be able to capitalize on digitization because digital systems are not available to everyone. The responsibility rests with the XO and S3 to ensure that units with differing digital capability can still be synchronized and employed according to the commander's intent.

Army Effectiveness – A Proposed Framework for Assessment

As with the previously proposed frameworks for assessment, a red-amber-green rating system was used as the format for the present proposed framework, and it is illustrated in the table below. The present criteria used to assess potential impact on Army effectiveness must evolve to reflect current issues. In addition, these criteria are by no means exhaustive and may not reflect the areas of greatest joint interest to the Army and *S3-XO.net* members. A more thorough assessment of the link between key organizational objectives and the jobs of the BN/BDE S3/XO was outside the scope of this research and is recommended for future assessment of *S3-XO.net*.

Army Effectiveness – Assessment of S3-XO.net

The impact of *S3-XO.net* on Army effectiveness was not formally assessed in the present research for three reasons. First, status ratings of conversation, content, and connections were all red-amber. Given these status ratings, it is unlikely that *S3-XO.net* could have a potential impact status greater than red or red-amber. Second, in the preceding two sections, it was determined that *S3-XO.net* likely has not yet achieved significant individual- or unit-level impact. Third, even if social and intellectual capital were actively developed in *S3-XO.net*, the APF has been active for less than three years. This time period is likely too short to expect a discernable impact at the organizational level, especially considering the relatively small percentage (3%) of the intended target audience of the forum currently holding membership.

Informal assessment of *S3-XO.net* indicated that some of the topics identified as relevant to having an impact on Army effectiveness are present in the forum, including, for example, command post of the future, fires and effects coordination cell, combined arms training in the unit of action, leadership challenges in transformation, and so on. However, conversation about these topics tended to be quite sparse.

Army Effectiveness – Recommendations

Our recommendations for generating discussion and knowledge sharing that will have a greater impact on Army effectiveness are the same as the recommendations for enhancing impact on member competence and professionalism and unit effectiveness. Facilitators must be intimately familiar with the needs and interests of the members and organization they are serving.

APPENDIX C – CONDUCTING ASSESSMENT OF THE ARMY PROFESSIONAL FORUM

Regular, formal assessment is the means by which an organization ensures the health and impact of its knowledge-management initiatives (Hanley, 2003; Crager & Lemons, 2003; Lesser & Storck, 2001; Department of the U.S. Navy, 2001). Assessment enables decision makers to effectively allocate limited resources to the initiative by (a) identifying the components of the initiative that require additional investment; and (b) providing insight into *how* investment could strengthen vulnerable aspects of the initiative. In addition, assessment reveals the degree to which investment in the initiative can be expected to payoff in terms of organizational performance.

Organizational decision makers must resist, however, confusing the means for capturing impact with impact itself, else the knowledge-sharing initiative will become incapable of adapting to changes in the organizational environment. As an analogy, a test of academic achievement may be used to capture the impact of an educational program, but test scores should never be considered the outcome of the educational program. When this happens (and it often does), focus shifts away from meeting environmental demands for intellectual development toward meeting an artificial standard for performance. Distancing from the environment decreases awareness and adaptability. Metrics for assessing the impact of a knowledge sharing-initiative must be flexible and must always reflect the environmental demands that pressure the initiative to evolve. The metrics and techniques presented in this report and appendix represent a starting point for thoughtful analysis of Army Professional Forums (APFs), an example of how it can be accomplished in response to both current environmental demands and in accordance with lasting and generalizable best practice in assessment.

The level of understanding about the health and impact of a discussion forum that can be accomplished in a given time is determined by the focus and efficiency of the assessment process. Focus is enhanced by a thorough understanding of the forum's online meeting space, the needs of the population the forum is intended to serve, the needs of the organization, and how the forum is expected to have an impact. For this reason, individuals conducting assessment should be educated in knowledge-sharing theory and practice and in the Army's functioning and organizational structure, particularly as it relates to the intended membership of the forum. Although independent, assessors should work closely with the forum leadership, facilitators, and active members of the forum to ensure that assessment directs forum cultivation rather than imposing top-down requirements. Efficiency is enhanced by standardization and, where possible, automated data collection. Several of the metrics presented in this report are designed to be generalizable, and provide standardized criteria for assessing APFs. In the table below, we present a broad overview of conducting assessment of APFs using our assessment framework. We address how it is done, how often it needs to be done, how long it takes, and whether or not it can be automated.

	How is it done?	How often does it need to be done?	How long does it take?	Can it be automated?
PLAN				
Statement of Purpose	Review of plan documentation	As events warrant	0.5 hr	No
Envisioned Impact	Review of plan documentation	As events warrant	0.5 hr	No
Description of Target Audience	Review of plan documentation	As events warrant	0.5 hr	No
Statement of Norms, Values, and Conventions	Review of plan documentation	As events warrant	0.5 hr	No
Specification of Roles and Responsibilities	Review of plan documentation	As events warrant	1 hr	No
Functional and Technical Specification	Review of plan documentation	As events warrant	1 hr	No
Comments	The plan should be assessed before the forum is launched--preferably by multiple assessors to ensure the objectivity and reliability of the rating--and after significant changes in forum membership are made (e.g., a sub-community breaks off to form its own forum) or immediately after significant changes in technical architecture are made (e.g., adding synchronous collaboration capability). Time estimates assume one assessor. Two assessors would approximately double the time estimate. After the plan is independently assessed, the findings should be discussed with the forum leadership and recommendations for strengthening the plan should be provided. If the initial plan requires significant modification, assessment should be conducted immediately after the plan is revised and prior to forum launch.			
PERSONNEL				
Leadership	Interviews with forum leaders	Every 6 months	2 hr + N hrs	No
Core Group	Interviews with core group; Biographical data collection	Every 6 months	4 hr + N hrs	No
Facilitators	Interviews with facilitators; Analysis of facilitator activity in the forum	Every 6 months	4 hr + N hrs	No
Technical Support	Interviews with technical support staff	Every 6 months	2 hr + N hrs	No
Comments	Initial assessment of personnel should be conducted within six months after forum launch. The time required to conduct the interviews for each personnel category is two hours plus one hour times the number of people interviewed. This estimate allows one hour for each interview and two hours to collate and summarize interview findings. Where other data are collected, two additional hours are estimated to conduct data collection. For quiet forums, two hours will allow complete analysis. For very active forums, two hours will allow analysis of a representative sampling of data. Time estimate does not include time devoted to scheduling interviews or downloading conversation posts into a main database used for analysis. This could be done automatically with databasing and scripting techniques. After personnel are independently assessed, the findings should be discussed with the forum leadership and recommendations for enhancing personnel support should be provided.			
FUNCTIONAL REQUIREMENTS				
Locating the Forum	Query forum leaders and/or facilitators; External search for forum	As events warrant	2 hr	No
Joining the Forum	Query facilitators; Survey members	As events warrant	1.5 hr	Yes/No
Tone in the Forum	Analysis of online meeting space	Every 6 months	1 hr	No
Conversation Support	Analysis of online meeting space	As events warrant	1 hr	No

Locating Content	Analysis of online meeting space; Survey members	As events warrant	3 hr	Yes/No
Locating People	Analysis of online meeting space	As events warrant	1.5 hr	No
Comments	Initial assessment of functional requirements, with the exception of surveying members, should occur prior to forum launch as a sort of usability test. Follow-on assessment should occur as significant changes are made to the design of the online meeting space (e.g., new content taxonomy) or to how it is accessed. Surveying members can be automated through pop-up survey questions administered in the online meeting space. Time estimates presented above are likely to be shorter for follow-on assessments. Time estimates for surveying members do not include the time required to automate survey administration or to modify survey questions from those presented in Appendix C, but do assume time required for data entry and summarization. Time estimates apply to surveying a representative sample of forum members. After functional requirements are independently assessed, the findings should be discussed with the forum leadership and facilitators, and recommendations for enhancing functional requirements should be provided. If initial functional requirements need significant modification, assessment should be conducted immediately after they are revised and prior to forum launch.			
CONNECTIONS				
Membership Composition	Analysis of online meeting space	Every 6 months	5 hr	Yes
Participating Members	Analysis of online meeting space	Every 6 months	0.5 hr	Yes
Identifying Experts	Analysis of online meeting space; Survey members	Every 6 months	0.5 hr	Yes
Facilitation of Connections	Query facilitators; Survey members	Every 6 months	2 hr	Yes/No
Connection Quality	Survey members	Every 6 months	3 hr	Yes
Comments	Initial assessment of connections should occur within 6 months of forum launch. All time estimates assume that assessment is not automated. Time estimate for membership composition includes time for data downloading and cleaning. Surveying members can be automated through pop-up survey questions administered in the online meeting space. Time estimates do not include the time required to automate survey administration or to modify survey questions from those presented in Appendix C, but do include time for data entry and summarization. Time estimates apply to surveying a representative sample of forum members. Data collection on membership composition, participating members and identifying experts could be automated through databasing and scripting techniques. After connections are independently assessed, the findings should be discussed with the forum leadership and facilitators, and recommendations for enhancing connections should be provided.			
CONTEXT				
Shared Narratives	Analysis of online meeting space	Every 6 months	0.5 hr	No
Shared Codes and Language	Survey members	Every 6 months	1 hr	Yes
Comments	Initial assessment of connections should occur within 6 months of forum launch. Time estimate for surveying members include time for data entry and summarization. Surveying members can be automated through pop-up survey questions administered in the online meeting space. Time estimates do not include the time required to automate survey administration or to modify survey questions from those presented in Appendix C, but do include time for data entry and summarization. Time estimates apply to surveying a representative sample of forum members. After context is independently assessed, the findings should be discussed with the forum leadership and facilitators, and recommendations for enhancing context should be provided.			

CONTENT				
Contributing Members	Analysis of online meeting space	Every 6 months	0.5 hr	Yes
Content Synthesis	Analysis of online meeting space	Every 6 months	4 hr	No
Content Organization	Analysis of online meeting space; Survey members	Every 6 months	1 hr	Yes
Content Activity	Analysis of online meeting space	Every 6 months	1 hr	Yes
Content Quality	Analysis of online meeting space; Survey members	Every 6 months	5 hr	Yes/No
Professional Links	Analysis of online meeting space	Every 6 months	0.5 hr	No
Comments	Initial assessment of content should occur within 6 months of forum launch. Time estimate for contributing members assumes data downloading and cleaning for membership composition has been completed. Surveying members can be automated through pop-up survey questions administered in the online meeting space. Time estimates do not include the time required to automate survey administration or to modify survey questions from those presented in Appendix C, but do include time for data entry and summarization. Time estimates apply to surveying a representative sample of forum members. Data collection on contributing members and content activity could be automated through databasing and scripting techniques. For quiet forums, the time estimate for content synthesis and content quality will allow complete analysis. For very active forums, estimates will allow analysis of a representative sampling of data. Time estimate does not include the time to modify the rubric presented in this report or to create a new rubric. Where possible, two assessors should be used to assess content synthesis and content quality and their assessments compared and combined. After content is independently assessed, the findings should be discussed with the forum leadership and facilitators, and recommendations for enhancing content should be provided.			
CONVERSATION				
Participating Members	Analysis of online meeting space	Every 6 months	0.5 hr	Yes
Conversation Activity	Analysis of online meeting space	Every 6 months	5 hr	Yes/No
Conversation Quality	Analysis of online meeting space; Survey members	Every 6 months	8 hr	Yes/No
Comments	Initial assessment of conversation should occur within 6 months of forum launch. Time estimate for contributing members assumes data downloading and cleaning for membership composition has been completed. Surveying members can be automated through pop-up survey questions administered in the online meeting space. The time estimate does not include the time required to automate survey administration or to modify survey questions from those presented in Appendix C, but do include time for data entry and summarization. Time estimates apply to surveying a representative sample of forum members. Data collection on participating members and conversation activity could be automated through databasing and scripting techniques. For quiet forums, the time estimate for conversation quality will allow complete analysis. For very active forums, estimates will allow analysis of a representative sampling of data. Time estimate does not include the time to modify the rubric presented in this report or to create a new rubric. Where possible, two assessors should be used to assess conversation quality and their assessments compared and combined. Time estimates do not include time to download conversation posts into a main database used for analysis. This could be done automatically with databasing and scripting techniques. After conversation is independently assessed, the findings should be discussed with the forum leadership and facilitators, and recommendations for improving conversation should be provided.			
INDIVIDUAL IMPACT				
Indirect Assessment	Analysis of online meeting space	Every 6 months	Unknown	No

Direct Assessment	Special purpose measures; Survey members	As events warrant	Unknown	Yes/No
Comments	The time estimated to conduct indirect assessment is unknown because it is unknown how long it will take to determine what content should be present in the forum to aid in the development of individual competence and professionalism. This will be at least slightly different for each forum. Once relevant content is determined, the estimated time to conduct assessment will depend on how much content is relevant and sampled. A forum plan with a solid statement of envisioned impact and facilitators/assessors familiar with the current Army will facilitate indirect assessment. The time estimated to conduct direct assessment is unknown because it is unknown how long it will take to develop special purpose measures (e.g., tactical games, situational judgment scenarios) and implement them in the online meeting space. Surveying members can be automated through pop-up survey questions administered in the online meeting space, but survey questions will have to change as content or emphasis changes. Direct assessment should only be conducted if the findings from indirect assessment suggest it is warranted. After individual impact is independently assessed, the findings should be discussed with the forum leadership and facilitators, and recommendations for improving impact should be provided.			
UNIT IMPACT				
Indirect Assessment	Analysis of online meeting space	Every 6 months	Unknown	No
Direct Assessment	Unit performance observations	As events warrant	Unknown	No
Comments	The time estimated to conduct indirect assessment is unknown because it is unknown how long it will take to determine what content is necessary to aid in the enhancement of unit effectiveness. This will be different for each forum. Once relevant content is determined, the estimated time to conduct assessment will depend on how much content is relevant and sampled. A forum plan with a solid statement of envisioned impact and facilitators/assessors familiar with the current Army will facilitate indirect assessment. The time estimated to conduct direct assessment is unknown because it is unknown how long it will take to arrange and conduct observations. Direct assessment should only be conducted if the findings from indirect assessment suggest it is warranted. After unit impact is independently assessed, the findings should be discussed with the forum leadership and facilitators, and recommendations for improving impact should be provided.			
ORGANIZATIONAL IMPACT				
Indirect Assessment	Analysis of online meeting space	Every 6 months	Unknown	No
Direct Assessment	Organizational performance observations; Archival data collection	As events warrant	Unknown	No
Comments	The time estimated to conduct indirect assessment is unknown because it is unknown how long it will take to determine what content is necessary to aid in the enhancement of organizational effectiveness. This will be different for each forum. Once relevant content is determined, the estimated time to conduct assessment will depend on how much content is relevant and sampled. A forum plan with a solid statement of envisioned impact and facilitators/assessors familiar with the current Army will facilitate indirect assessment. The time estimated to conduct direct assessment is unknown because it is unknown how long it will take to arrange and conduct observations or collect archival data. Direct assessment should only be conducted if the findings from indirect assessment suggest it is warranted. After organizational impact is independently assessed, the findings should be discussed with the forum leadership and facilitators, and recommendations for improving impact should be provided.			

APPENDIX D – FORUM MEMBER SURVEY

Joining the Forum					
1. Membership Restrictions	There shouldn't be any membership restrictions	Unreasonable; Overly restrictive	Didn't notice there were restrictions	Reasonable, but I can see where they'd need to make some exceptions	Perfectly reasonable
2. Filling Out the Application	Took too long; Felt like a waste of time	Took longer than it needed to	About what you'd expect from an online form	Better than what you'd expect from an online form	Really quite simple
3. Membership Granting	Took too long; Nearly forgot I applied	Took longer than I thought it would	Didn't notice how long it took to be granted membership	Took less time than I thought it would, within 24 hours	Membership was granted almost immediately
4. New Member Welcome	Welcome letter was off-putting	I would have written the welcome letter differently	Ignored/skipped the welcome letter	Thought the welcome letter was a nice gesture	Welcome letter made me feel like a valued new member
Finding Information					
5. Navigating Topics	I don't bother browsing anymore; Takes too long	Navigating topics is cumbersome	I'm generally not a browser; I mostly use search capability	Navigating topics works fairly well	No trouble navigating through topics
6. Search	Worthless; Can't find anything	Search capability doesn't work like it could	Didn't notice anything special about the search capability one way or the other	Search capability works fairly well; Only occasional problems	Very easy to use; I can count on finding what I need
7. New Additions	I have no idea how to find new additions	I know the flashing flag indicates a new addition, but I don't know where to go from there	Didn't notice anything special about trying to find new additions one way or the other	I can find new additions, but it takes some effort	No trouble to figure out what or where the new additions are
8. Location of Content	Don't understand how content winds up where it is	I would arrange the content differently	Didn't give much thought to how the content is arranged	Content arrangement generally makes sense	Content arrangement is exactly how I would do it
Finding Experts					
9. Expert Members	It's no easier to find an expert in the forum than it is to find one in my unit	It's more difficult to find experts using the member directory than it should be	Didn't give much thought to using the member directory to find expert members	It might take a while, but I could find an expert member in the forum if I needed to	If there's an expert I need who belongs to the forum I can find him/her, no problem
10. Expert Non-Members	Forum can't help me find experts that are not already members of the forum	Forum might be helpful for finding expert non-members, but it's not as effective as it could be	Didn't think about using the forum to find experts who don't belong to the forum	More often than not, someone in the forum will know someone else who's not in the forum	The forum is a valuable resource for finding experts, even if they are non-members

11. Getting Assistance	I wouldn't count on getting timely help from anyone in the forum	Members are strapped for time; They want to help but will only do so if it's easy for them	Haven't given much thought to how willing forum members might be to help me	who could be a valuable resource	If I asked for help, I know another member would come to my aid
Posting Questions					
12. Acknowledgement	The acknowledgement I've received from the forum support team after posting a question was off-putting; Didn't think they could help me	I've never received acknowledgement from the forum support team after posting a question	Don't remember if I received an acknowledgement after posting a question or not	I've received acknowledgement for the question(s) I've posted, but it was just that my post had been received	My question(s) was acknowledged by the forum support team; They promised that they'd do what they could to ensure my question was answered
13. Facilitation	The support team is not capable of helping me get my questions answered; I don't bother to post	I'd post a question on the forum, but I'm only somewhat confident that the forum support team could get it answered for me	Haven't considered how far the forum support team would go to help me get a question answered	The support team would help me get a question answered, but they'd only go so far	The support team would go "all out" to help me get a question answered
Making Connections					
14. Getting Help	It's more productive to get help from other people in my unit than it is to seek help in the forum	Whenever I've asked a question in the forum, I've not gotten the help I was expecting; People don't seem to get the answers they seek in the forum	I have no opinion about how effective it is to seek help in the forum	Whenever I've asked a question in the forum, I've gotten some degree of help; People seem to get the answers they seek in the forum	Whenever I've asked a question in the forum, I've gotten prompt and effective help; The forum seems more effective for getting help than any other resource
15. Using Connections	It's more productive to seek an expert in my unit than it is to seek one in the forum	Whenever I've been connected to an expert via the forum, I've not gotten the help I was expecting, but I think connecting to experts in this way can be quite helpful	I have no opinion about how effective connections to experts in the forum are for forum members	Experts in the forum seem to be a valuable resource, but haven't yet been to me personally	Whenever I've found an expert in the forum he/she has been a valuable resource
16. Re-Using Connections	I have never, would never, call on the same expert twice	I have not yet felt comfortable calling on an expert I met in the forum more than once; Maybe	Didn't cross my mind to ask the same person more than one question	Depending on the person, I would feel comfortable calling on an expert I met in the forum to help me	I've felt/would feel totally comfortable calling multiple times on an expert who's helped

		one day I will	more than once	me in the forum
Sharing Experience				
17. Sense of Community	The forum cannot develop in its members a sense of professional community	I don't see a strong sense of professional community developing due to the forum as it is, but I think it's possible	Haven't had feelings about a sense of professional community, one way or the other	I feel a strong sense of community among my professional peers due to the forum
18. Shared Experience	I don't feel any stronger sense of camaraderie with forum members than I do with strangers	I don't see this forum resulting in strong feelings of shared experience, but I think it's possible	Haven't had feelings about having shared experience one way or the other	Being a member of the forum makes me feel like I've shared experience with other forum members
Understanding Content				
19. Nature of Content	Content, as a rule, is either too theoretical or so specific to other areas of interest (e.g., branch) as to not be useful to me	I've had to work at it to find content that speaks well to my area of interest (e.g., branch), but I've found some	Haven't noticed anything about the nature of content one way or the other	The content more often than not speaks well to my area of interest (e.g., branch)
Utility of Content				
20. Downloads	Haven't found anything useful yet	I occasionally find a relevant download, but nothing immediately useful	Haven't given much thought to how useful the downloads are	I've found at least three downloads that have been very helpful
21. Conversation	Haven't found anything valuable yet	I occasionally read a relevant conversation, but nothing immediately useful	Haven't given much thought to how valuable the conversations are	I've read at least three discussions that were valuable to me
Additional Comments (Use this area to share your reflections on how the forum has helped you or could be made better, or to share other thoughts not captured by the survey items.)				

APPENDIX E – ACRONYMS

AKO	
APF	
ATLDP	Army Training and Leader Development Panel
BCKS	Battle Command Knowledge System
BCT	brigade combat team
BDE	brigade
BN	battalion
BOS	battlefield operating system
BTB	brigade troops battalion
C2	command and control
CAC	Combined Arms Center
CALL	Center for Army Lessons Learned
CCIR	commander's critical information requirements
CG	commanding general
CGSC	Command and General Staff College
COA	course of action
CoP	community of practice
DOA	U.S. Department of the Army
DSM	decision support matrix
DST	decision support template
FECC	fires and effects coordination cell
FM	field manual
FMI	field manual interim
FORSCOM	U.S. Army Forces Command
ISR	intelligence, surveillance, and reconnaissance
KM	knowledge management
MDMP	military decision-making process
METL	mission essential task list
MI	military intelligence
MTDA	modification table of distribution and allowances
MTOE	modification table of organization and equipment
NCO	noncommissioned officer
OIF MHAT	Operation Iraqi Freedom Mental Health Advisory Team
RSTA	reconnaissance, surveillance, and target acquisition

S3	operations officer
SBCT	Stryker brigade combat team
SOP	standing operating procedure
TACSOP	tactical standing operating procedures
TOC	tactical operations center
UE	unit of employment
USAIS	U.S. Army Infantry School
XO	executive officer